B.V.RAJU COLLEGE

VISHNUPUR,BHIMAVARAM

Percentage of students undertaking project work/field work/internship

Sl No	Programme name	Program Code	List of students undertaking project work/field work/internship	Page No
1	PROJECT WORK	MCA IV SEMESTER	II MCA Students	2-7
2	SUMMER INTERNSHIP	MCA II SEMESTER	I MCA students	8-16
3	INTERNSHIP IN SAYUKTH TECHNOLOGIES	II MCA	Jyothi Kolla	17-21
			Bodanki Jayakala	
			K.Yagna Harika	
			G.Sai Tejasri	
			K.Janaki	
4	SHORTTERM INTERNSHIP ON DATA SCIENCE	III BSC V SEM	III B.Sc (NO OF STUDENTS 146)	22-34
5	SHORTTERM INTERNSHIP ON NODE.JS & REACT JS	III BSC V SEM	III B.Sc (NO OF STUDENTS 105)	35-45
6	SHORTTERM INTERNSHIP ON UI AND UX DESIGN	III BCOM V SEM	III B.Com (NO OF STUDENTS 65)	46-58
7	EDU SKILLS ONLINE SHORT TERM INTERNSHIP	III BSC & BCOM V SEM	III BSC -MECS (NO OF STUDENTS 507)	59-72
8	EDU SKILLS ONLINE LONG TERM INTERNSHIP	III BSC & BCOM VI SEM	III BSC -MECS (NO OF STUDENTS 519)	73-123
9	LONGTERM INTERNSHIP ON DATA SCIENCE	III BSC VI SEM	III B.Sc (NO OF STUDENTS 96)	124-130
10	LONGTERM INTERNSHIP ON NODE.JS & REACT JS	III BSC & BCOM VI SEM	III B.Sc & B.Com(NO OF STUDENTS 91)	131-137
11	LONGTERM INTERNSHIP ON UI AND UX DESIGN	III BSC & BCOM VI SEM	III B.Sc & B.Com(NO OF STUDENTS 98)	138-142
12	LONGTERM INTERNSHIP ON NODE.JS & REACT JS	III B.Com & VI Sem	III B.Com	143-146
13	AWS Academy Graduate - AWS Academy Cloud Architecting	III B.Com & VI Sem	III B.Com	147
14	AWS Academy Graduate - AWS Academy Cloud Architecting	III B.Com & VI Sem	III B.Com	148
15	Virtual Internship	III B.Com & VI Sem	III B.Com	149-182
16	LONG TERM INTERNSHIP	III BSC LIFESCIENCE	III MB BT BC & III BT BC C (97)	183-663

B V RAJU COLLEGE

M C A DEPARTMENT

PROJECT TITLES LIST

S.NO.	Regd.No.	Name Of The Student	Project Title	VCUBE/ 7I TECH
1	2285351001	A SPANDANA	Classification And Prediction Of Severity Of Inflammatory Bowel Disease Using Machine Learning	VCUBE
2	2285351002	ADABALA TRINADH	Leveraging CNN And Transfer Learning For Vision-Based Human Activity Recognition	VCUBE
3	2285351003	ADDALA RAJESH	The Influence Of Artificial Intelligence On E-Governance And Cybersecurity	7I TECH
4	2285351004	AKKINA BALA KRISHNA	Detectdui An In Car Detection System For Drink Driving And Bacs	7I TECH
5	2285351005	AKULA ADITYA	Location-Aware Adaptive Normalization A Deep Learning Approach For Wildfire Danger Forecasting	7I TECH
6	2285351006	A PAVANI	Data Security Approach On Cyber Crime With Web Vulneracalbility	VCUBE
7	2285351007	AKUMURI NIKHIL	The Influence Of AI On E- Governancce And Cybersecurity In Smart Cities	7I TECH
8	2285351008	ALLURI HEMANTH PRASAD VARMA	Travel Direction Recommendation Model Based On Photos Of User Social Network Profile	7I TECH
9	2285351009	BADETI SATYA SAINADH	A Comparative Study on Emotion AI using Machine Learning and Deep Learning Models	7I TECH
10	2285351010	BATCHU JAYANTH BABA	Identifying Student Profiles Within Online Judge Systems Using Explainable Artificial Intelligence	7I TECH
11	2285351011	BATHULA VENKAIAH	A Novel Time - A ware Food recommender - System Based On Deep learning and Graph Clustering	7I TECH
12	2285351012	B.NEELIMA	Enron Email Using Machine Learning With Data Analysis	VCUBE
13	2285351013	BELLAMKONDA ROSHINI JYOTHI	Explainable Artificial Intelligence For Patient Safety A Review Of Application in Pharmacovigilance	7I TECH
14	2285351014	BOBBADI AKHIL	Credit Card Fraud Dettectionusining State Of The Art Machin Learning	7I TECH
15	2285351015	BODANKI JAYAKALA	DigiPanchayat	INTERNSHIP
16	2285351016	BOKKA VAMSI KRISHNA	Fake News, Disinformation,And Deepfakes: Leveraging Distributed Ledger Technologies And Blockchain To Combat Digital Deception And Counterfeit Reality	7I TECH
17	2285351017	BOLLA SANDEEP	Enhancing The Detaction Of Fake News In Social Medaia Based On Machin Lerning Models	7I TECH
18	2285351018	BOMMANABOINA SAI SANDEEP	Inventory Management System using PHP	INTERNSHIP
19	2285351019	BONAM NAGA DURGA	Data Driven Energy Economy Prediction For Electric City Buses Using Machine Learning	7I TECH

20	2285351020	B.KEJIYA	Machine Learning Approach For Opinion Mining Online Customer Review	VCUBE
21	2285351021	CHERUKU GEETHABHAVANI	Authentication And Key Agreement Based On Anonymous Identity For Peer-To-Peer Cloud	7I TECH
22	2285351022	CH.BHAVYASRI	Intelligent Crop Recommendation System Using Machine Learning	VCUBE
23	2285351023	CH.MOUNIKA	Machine Learning Based Rainfall Prediction	VCUBE
24	2285351024	D.LOKA SATYA SAI MANASA	Prediction Probability Of Getting An Admission Into A University Using ML	VCUBE
25	2285351025	DASARI SAITEJA	An Efficient Spam Detection Technique For IOT Devices Using Machine Learning	7I TECH
26	2285351026	DIGAMARTHI BHARGAVA NARASIMHA RAO	Pay As You Decrypt Decryption Outsourcing For Functional Encryption Using Blockchain	7I TECH
27	2285351027	EPPILI.SAI BHARGAV	Secure Storage Auditing With Efficient Key Updates For Cognitive Industrial IoT Environment	7I TECH
28	2285351028	E.SURENDRA BABU	Car Popularity Prediction By ML	VCUBE
29	2285351029	GADIRAJU LALITH ADITHYA VARMA	Flight Delay Prediction Based On Aviation Big Data And Machine Learning	7I TECH
30	2285351030	GANDROTHU BHASKAR	Activity Minimization Of Misinformation Influence In Online Social Networks	7I TECH
31	2285351031	GEDDADA SAI TEJASRI	DiploCloud: Efficient and Scalable Management Of RDF Data in the Cloud	VCUBE
32	2285351032	GIDDA NAGA DURGAPRASAD	Discover Customer Gender From Online Shopping behaviour	7I TECH
33	2285351033	GODI CHARAN SUNDER	Prediction Of Grain Output In Anhui Province Based On Machine Learning	VCUBE
34	2285351034	GOKAVARAPUVENKATESH	Creating Alert Messages Based On Wild Animal Activity Detection	7I TECH
35	2285351035	GOLLAVILLI SAI BHARATH	Rain Prediction using Machine Learning	INTERNSHIP
36	2285351036	GOPISETTY KAVYA SRIJA	Fitness Tacking Application Using Python	OutSide
37	2285351037	GRANDHI MALLIKA	Designing Secure And Efficient Biometric-Based Secure Access Mechanism For Cloud Services	7I TECH
38	2285351038	GUBBALA SAI RAM	Achieving Searchable Encryption Scheme With Search Pattern Hidden	7I TECH
39	2285351039	GULLAPALLI BHARGAVI	Similarity Search For Encrypted Images In Secure Cloud Computing	7I TECH
40	2285351040	GUNDA VAISHNAVI	Predicting Behaviour Change In Students With Special Education Needs Using MultiModal Learning Analytics	7I TECH
41	2285351041	RISHI SARAVAN GUNDUMOGULA	Detecting And Characterizing Extremist Reviewer Groups In Online Product Reviews	7I TECH
42	2285351042	IRRINKI SRIVIJAYA	Securing Resources In Decentralized Cloud Storage	7I TECH
43	2285351043	JAKKAM. NAGA SATYA PRIYA	Pupilheart Heart Rate Variability Monitoring Via Pupillary Fluctuations On Mobile Devices	7I TECH

44	2285351044	JUTTUGA NANI PRASAD	Online Voting System Using Block Chain	VCUBE
45	2285351045	KADALI SAI KRISHNA	DEARNN A Hybrid Deep Learning Approach For Cyberbullying Detection In Twitter Social Media Platform	7I TECH
46	2285351046	KAIRAM VENKATESWARA RAO	Revocable Attribute-Based Data Storage In Mobile Clouds	7I TECH
47	2285351047	KANCHARLA VENKATA HEMANTH	Predictive Analysis For Big Mart Sales Using Machine Learning Algorithms	7I TECH
48	2285351048	KARIMIJJI CHINNI RUPASRI	Multi-Class Stress Detection Through Heart Rate Variability A Deep Neural Network Based Study	7I TECH
49	2285351049	K.AKASH	Image Recognisation Using A.I	VCUBE
50	2285351050	KARUTURI CHANDINI	Sms Spamming Detection	VCUBE
51	2285351051	KARUTURI YAGNA HARIKA	Deduplicatable dynamic Proof Of Storage For Multi - User Environment	VCUBE
52	2285351052	KAVURU SRAVANI	Explainable Artificial Intelligence For Patient Safety	7I TECH
53	2285351053	KOLLA LAKSHMI NAGA VENKATA JYOTHI	DigiPanchayat	INTERNSHIP
54	2285351054	KOLLA SIVANNARAYANA	Child Mortality Prediction Using Machine Learning Techniques	7I TECH
55	2285351055	KOLLI DURGA MAHESH		
56	2285351056	KOLLIPARA PAVAN KALYAN	Fighting Money Laundering With Statistics And Machine Learning	7I TECH
57	2285351057	K.TANUSHA	Real-Time Personalized Physiologically Based Stress Detection For Hazardous Operations	7I TECH
58	2285351058	K.JANAKIKALYANI	Predicting The Top-N Popular Videos Via Cross Via Cross- Domain Hybrid Model	VCUBE
59	2285351059	KONA NAGA SAI SRINIVAS	Unsupervised Machine Learning For Managing Safety Accidents In Railway Stations	7I TECH
60	2285351060	KORNE JANAKI	DigiPanchayat	INTERNSHIP
61	2285351061	K.V.S.JAGADEESH	An Application Of A Deep Learning Algorithm for Automatic Detection Of Unexpected Accidents Under bad CCTV Monitoring Conditions in Tunnels	VCUBE
62	2285351062	K.HARICHARAN	Effective Software Effort Estimation Leveraging Machine Learning for Digital Transformation.	7I TECH
63	2285351063	KUNISETTI. GANESH	Cloud Raid Detecting Distributed Concurrency Bugs Log Mining And Enhancement	7I TECH
64	2285351064	KURUMOJUSAIKRISHNA	An Efficient Feedback Control Mechanism For Positive Or Negative Information Spread In Online Social Networks	7I TECH
65	2285351065	KURUNELLI HEMANTH KUMAR	Automated Android Malware Detection Using Optimal Ensemble Learning Approach for Cyber Security	7I TECH

66	2285351066	MALLAMPALLI TEJA BABU	Fast Secure And Anonymous Key Agreement Against Bad Randomness For Cloud Computing	7I TECH
67	2285351067	MALLULA RAVI CHARUN	Secure Keyword Search And Data Sharing Mechanism For Cloud Computing	7I TECH
68	2285351068	M. HEMA	Performce Analysis Of Machine Learning Classifer For Predecting Chronic Kidney Disease	VCUBE
69	2285351069	MANCHIGANTI RAM BHASKAR	Fraud Detection in Banking Data by Machine Learning Techniques	7I TECH
70	2285351070	NAGA VENKATA SRI MAHALAKSHMI	Activity Minimization Of Misinformation Influence In Online Social Networks	7I TECH
71	2285351071	MOHAMMAD SABIHA	Optimal Ambulance Positioning For Road Accidents With Deep Embedded Clustering	7I TECH
72	2285351072	MULAPARTHI MAHESWARI	Automated Emerging Cyber Threat Identification and Profiling Based On Natural Language Processing	7I TECH
73	2285351073	MUPPIDI SRIKANTH	Phishing Detection System Through Hybrid Machine Leraning Based On Url	7I TECH
74	2285351074	MOHAN RAJESH	Modeling And Predicting Cyber Hacking Breaches	VCUBE
75	2285351075	M.N.V KRISHNA PRIYA	Content Analysis Of Messages In Social Networks Identification Of Suicidal Types	VCUBE
76	2285351076	M.VAMSI VARMA	Land Resource Management Information Platform Based On Artificial Intelligence Technology	VCUBE
77	2285351077	N.S.K.D.N.BHAVANI	Classification Of Diabetic Walking Through Machine Learning: Survey Targeting Senior Citizens	VCUBE
78	2285351078	NAKKA RIBKA	A Novel Approach For Disaster Victim Detection Under Debris Environment Using Decision Tree Algorithms With Deep Learning Features	7I TECH
79	2285351079	N.ANJANI KUMAR	Exploratory Data Analysis And Machine Learning On Titanic Disaster Dataset	VCUBE
80	2285351080	NEELI UMA DEVI	A Multi Perspective Fraud Detection Method For Multi Participate E Commerce Transaction	7I TECH
81	2285351081	N SANTHOSH	Fraud Detection in Banking Data by Machine Learning Techniques	7I TECH
82	2285351082	NUNE NARENDRA RAJU	A Survey on machine learning techniques for the diagnosis of liver disease	INTERNSHIP
83	2285351083	P.L.V.V.VYSHNAVI	An Examination System Automation Using Natural Language Processing	VCUBE
84	2285351084	P.CHITRA BHANU	Prediction Of Thyroid Disease(Hypothyroid) In Early Stage Using Feature Selection And Classification Techniques	VCUBE
85	2285351085	P.SRINADH	Data Analysis By Web Scraping Using Python	VCUBE
86	2285351086	PEDDIREDDY NAGA VENKATESH	A Deep Learning Based Efficient Firearms Monitoring Technique for Building Secure Smart Cities	7I TECH
87	2285351087	PEETHANI SATYA HANUMA	Credit Card Fraud Detection Using Adaboost And Majority Votings	VCUBE
88	2285351088	PITANI SATYASRINIVAS	Detection Of Deepfake Videos Using Long Distance Attention	7I TECH

89	2285351089	P.SAI PRAVEEN	Research On Financial Data Prediction Algorithm Based On Deep Learning	VCUBE
90	2285351090	POLINA SRIRAM	Gesture Controlled Mouse Using Python	INTERNSHIP
91	2285351091	P.VENKATA PAVAN KUMAR	Movie Recommender System Using Sentiment Analysis	VCUBE
92	2285351092	P SATISH	Securing Cloud Data Under Key Exposure	VCUBE
93	2285351093	P.KUSUMANJALI	5G_Smart Diabetes Towards Personalised Diabetes	VCUBE
94	2285351094	PUVVALA VEDASRI	Detecting and Mitigating Botnet Attacks in Software-Defined Networks Using Deep Learning Techniques	7I TECH
95	2285351095	RAAVI. LAKSHMI SOWJANYA	Propounding First Artificial Intelligence Approach For Predicting Robbery Behavior Potential in an Indoor Security Camera	7I TECH
96	2285351096	R.JAGADEESH	Prediction Of House Pricing Using Machine Learning With Python	VCUBE
97	2285351097	RAVURI AKHILESH	Tourists Place Review Sentiments Classification Using Machine Learning Techniques	VCUBE
98	2285351098	R.JNANESWARI	Heart Disease Prediction Using ML	VCUBE
99	2285351099	R.C.S.S.S.RAMYA LATHA	Finding Trustworthy Service Provider In Trusted Network	VCUBE
100	2285351100	SAGI PRAVEENA	Data Security Approach On Cyber Crime With Web Vulnerability	VCUBE
101	2285351101	S.LIKHITHA	Currency Recognization System Using Image Processing	VCUBE
102	2285351102	SARIPELLA JASMIN	Creating Alert Messages Based On Wild Animal Activity Detection Using Hybrid Deep Neural Networks	7I TECH
103	2285351103	S.SAI KRISHNA REDDY	Image Captioning Using Convolutional Neural Networks And Recurrent Neural Network	VCUBE
104	2285351104	SAYED AMREEN	Identifying Hot Topic Trends In Streaming Text Data Using Sequential Evaluation Model Based On Distributed	7I TECH
105	2285351105	SK.KAREEM	Predicting Flight Delays With Error Calculation Using Machine Learned Classifiers	VCUBE
106	2285351106	SHAIK REHANA	Improving Shopping Mall Revenue By Real Time Customized Digital Coupon Issuance	7I TECH
107	2285351107	SHAIK RUHI	Deepside A Deep Learning Framework For Drug Side Effect Prediction	7I TECH
108	2285351108	SHAIK SAJAD	Collegeconnect: A Network Platform For Students	OutSide
109	2285351109	SHAIK SHARUK	User Centric Machine Learning Frame Work For Cyber Security Operations Center	VCUBE
110	2285351110	SHEIK ALTAF	Datafits A Heterogeneous Data Fusion Framework For Traffic And Incident Prediction	7I TECH
111	2285351111	S.DIMPLE SAI	Text Classification On Twitter Data	VCUBE

112	2285351112	S.BHUVANESWARI	Big Mart Sales	VCUBE
113	2285351113	TALATAM. S V H KRISHNA NAIDU	Analyzing and Detecting Money- Laundering Accounts in Online Social Natworks	VCUBE
114	2285351114	T.ANILBABU	Evaluation Based Approaches For Liver Disease Prediction Using Machine Learning Algorithms	VCUBE
115	2285351115	T.TARUN KUMAR	Building Search Engine Using Machine Learning Technique	VCUBE
116	2285351116	T.MOHAN DURGA SRI VARA PRASAD	Classification Of Digital Dental X-Ray Images Using Machine Learning	VCUBE
117	2285351118	TIRUMANI RAMA KRISHNA	A Verifiable Semantic Searching Scheme By Optimal Matching Over Encrypted Data In Public Cloud	7I TECH
118	2285351119	V.KESAVA KUMAR MURTHY	Fake News Detection Using Ml Approaches: A Systematic Review	VCUBE
119	2285351120	V.PRUDHVINADH	Blockchain A Game Changer For Securing IOT Data	VCUBE
120	2285351121	V. VIDYADHAR REDDY	A Study Of Block Chain Technology In Farmer's Portal	VCUBE
121	2285351122	VEMULA JHANSI RANI	E- Health Monitoring System With Diet and Fitness Recommendation Using Machine Learning	VCUBE
122	2285351123	V.SAI PRASANTH	Object Visual Detection For Intelligent Vehicles	VCUBE
123	2285351124	V.POOJITHA	Machine Learning Application For Black Friday Sales Prediction Framework	VCUBE
124	2285351125	V.LAKSHMI NARASIMHA SWAMY	Application Of Machine Learning In The Field Of Health Care	VCUBE
125	2285351126	V. BINDHUMADHAVI	Customer Loan Prediction Analysis	VCUBE
126	2285351127	Y.BHAGYA LAKSHMI	Sentiments Detection And Amazon Product Review	VCUBE
127	2285351128	Y.VEERA BABU	International Stock Index Prediction Using Artificial Neural Network With Python Programming	VCUBE
128	2285351129	Y. PAVANI NAGA DURGA	Automated Food Image Classification Using Deep Learning Approach	VCUBE
129	2285351130	YEJJALA VAMSI	Analysis Of Women Safety In Indian Cities Using Machine Learning On Tweets	VCUBE
130	2285351131	Y.KRISHNA VAMSI	Characterizing And Predicting Early Reviewers For Effective Product Marketing On E-Commerce Websites	VCUBE
131	2285351132	Y.KUMAR	Decision Tree Model For Email Classification	VCUBE

B.V. RAJU COLLEGE

Vishnupur, Bhimavaram.

(Accredited by NAAC With B^{++} Grade)

Department of MCA

MOU Activity

Summer Internship Training Program

20th March 2024

to

22nd April 2024

by

V CUBE Software Solutions Pvt. Ltd.

Hyderabad.

B.V. RAJU COLLEGE

Vishnupur, Bhimavaram.

The Memorandum of Understanding (MOU) was signed between B.V. RAJU COLLEGE and V CUBE Software Solutions Pvt. Ltd., Hyderabad.

Under this MOU, **"Summer Internship Training Program"** was Organized for I MCA, II Semester Students from 20-03-2024 to 22-04-2024.

SCHEDULE

1st Week:

- Creating the Project.
- Implementation of one Module.
- Using HTML, CSS, JavaScript, JSP and JDBC.

2nd week:

- Implementation of 2nd Module.
- Using HTML, CSS, JavaScript, JSP and JDBC.

3rd Week:

- Implementation of 3rd Module.
- Using HTML, CSS, JavaScript, JSP and JDBC.

4th week:

- Documentation of the Project

Date: 20-03-2024 Inaugural Session

B.V. RAJU COLLEGE

Vishnupur: Bhimavaram.

2024 SUMMER INTERNSHIP PROJECT BATCHES

Batch	Reg. No.	Student Name	Title of the Project
1	2385351001	ADDEPALLI NAGA VENKATA LAKSHMI	CRM FOR AIRLINE INDUSTRY
	2385351002	AKULA MANIKUMAR	
	2385351003	ALLAKA SAI SUREKHA	
	2385351004	ALLAM BHAVANA	
2	2385351005	ALTHI EZRAYEL	E-CLASSIFIEDS
	2385351006	AMRUTALURI PANDU SANDEEP	
	2385351007	ANTERVEDIPALEM SAI TARUN	
	2385351008	ARANALA SAI CHANDRAMOULI	
3	2385351009	BALIJEPALLIRAMAKOTI V N SINDHUSRI PRIYANKA	ANALYSIS OF WOMEN SAFETY IN INDIAN CITIES
	2385351010	BALLA VANI	
	2385351011	BANDARU ANUHYA	
	2385351012	BATTULA VIJAY	
4	2385351013	BHUMI VENKATA KISHORE	ONLINE LIBRARY
	2385351014	BODAPATI KAVYA LAKSHMI TULASI	
	2385351015	BONAM PAVAN SATYA SAI	
	2385351016	BONKURI SANDHYA	
5	2385351017	CHALLAPALLI NAGA SIVA SAI GANESH	HOTEL MANAGEMENT SYSTEM
	2385351018	CHANAPATHI INDU NAVYA SRI	
	2385351019	CHEGONDI SRIRAM	
	2385351020	CHEKURI LALITHA	
6	2385351021	DANGETI ROHITH SAI ARJUN	URBAN STREET CLEANLINESS ASSESSMENT
	2385351022	DASARI DHANA SYAM GANESH	
	2385351023	DASARI PRAVEEN	
	2385351024	DASYAM JAHNAVI SREE ARUDHRA	
7	2385351025	DEVABATTULA MANIKANTA	ONLINE TAXICAB SERVICE
	2385351026	DEVARAKONDA V S P L SREEJA	
	2385351027	DIGAMARTHI NAGA VENKATA LAKSHMI	
	2385351028	GADI VINAY KIRAN	

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2024 SUMMER INTERNSHIP PROJECT BATCHES

Batch	Reg. No.	Student Name	Title of the Project
8	2385351029	GAJJALA BHASKAR NARAYANA	E-HEALTH CENTER SYSTEM
	2385351030	GANDETI BINDU APARNA	
	2385351031	GARA VAMSI KRISHNA	
	2385351032	GOLL AKSHAY	
9	2385351033	GOLLA DINESH CHANDRA VAMSI	STUDENT FEEDBACK SYSTEM
	2385351034	INDUKURI ARTHI MAHALAKSHMI	
	2385351035	IRRINKI SATISH	
	2385351036	JALLURI CHANDRIKA	
10	2385351037	JALLURI VIDYA SAI MOUNIKA	ONLINE SOCIAL NETWORK
	2385351038	JANYAVULA SAI KUMAR	
	2385351039	JAYAVARAPU HEMANTH	
	2385351040	KADIYAM SOMA SEKHAR	
11	2385351041	KALAGARA PUJASRI	COMPLAINT MANAGEMENT SYSTEM
	2385351042	KAMPATI RAGHU NAGA ROHIT	
	2385351043	KAMUJU NAVYA	
	2385351044	KANDULA KESAVA NAGA SATYA PRAKASH	
12	2385351045	KARRI MOUNIKA LAKSHMI APARNA	COLLABORATIVE FILTERING-BASED RECOMMENDATION OF SOCIAL VOTING
	2385351046	KARRI SUSMITHA	
	2385351047	KASANI BHARGAVI	
	2385351048	KHANDAVALLI SESHA KALYANI	
13	2385351049	KODI SUSHMA SRI	A NOVEL RECOMMENDATION MODEL REGULARIZED WITH USER TRUST AND ITEM RATINGS
	2385351050	KOLLI HARSHITHA	
	2385351051	KOLLURI PRASANNA CHANDRIKA	
	2385351052	KOMATILANKA VENKATA SATYANARAYANA	
14	2385351053	KOPPULA RAM KISHORE	SOCIRANK IDENTIFYING AND RANKING PREVALENT NEWS TOPICS USING SOCIAL MEDIA FACTORS
	2385351054	KORADA RUPA DEVI	
	2385351055	KOTA NAGA SAI PRAVEEN	
	2385351056	KOTHALANKA DINESH	

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2024 SUMMER INTERNSHIP PROJECT BATCHES

Batch	Reg. No.	Student Name	Title of the Project
15	2385351057	KOTIPALLI UMADEVI	PERSONAL WEB REVISITATION BY CONTEXT AND CONTENT KEYWORDS WITH RELEVANCE FEEDBACK
	2385351058	KOVVURI MAHA LAKSHMI	
	2385351059	KOVVURI MALLESWARI SUBRAMANYA LAKSHMI	
	2385351060	KOYYANA DEVI NUKA NAGALAKSHMI	
	2385351061	KUKKALA POOJITHA	
16	2385351062	KUNCHANAPALLI ANUSHA JYOTHI	BUS SCHEDULING
	2385351063	LAKKAMSETTY SATYA NAGA SAI NIRMAL KUMAR	
	2385351064	MADDALA USHA	
	2385351065	MADDIMSETTI BINDHU DURGA BHAVANI	
	2385351066	MADHAVI VENKATA VISALAKSHI VADAPALLI	
17	2385351067	MALLAPA VEERA VENKATA SAI DIVYA BALA	E-CLASSIFIEDS
	2385351068	MEESALA GANGADHAR	
	2385351069	MEKA DIVYA SREE	
	2385351070	MENDA SANTHOSH KUMAR	
	2385351071	MIDDE KUSWANTHA LAKSHMI MANIKANTESWARI	
18	2385351072	MIRIYALA RENUKA NAGAVALLI	HOTEL MANAGEMENT SYSTEM
	2385351073	MOGALIKUDURU SOWJANYA	
	2385351074	MOGANTI SUPRA JYOTHSNA	
	2385351075	MOHAMAD CHANDINI	
19	2385351076	MURUKURTHI SANDEEP	ONLINE LIBRARY
	2385351077	MUTYALA TARA SANKAR	
	2385351078	NAGIDI NANDINI	
	2385351079	NAGUBANDI SAI SREE	
20	2385351080	NALLAN CHAKRAVARTHULA VARALAKSHMI G S R MAHATHI	CRM FOR AIRLINE INDUSTRY
	2385351081	NANIPATRUNI PRAVEEN	
	2385351082	NARAVA NAGA VENKATA SATYANARAYANA	
	2385351083	NARKEDAMILLI LAKSHMI BHARGAVI	

B.V. RAJU COLLEGE

Vishnupur: Bhimavaram.

2024 SUMMER INTERNSHIP PROJECT BATCHES

Batch	Reg. No.	Student Name	Title of the Project
21	2385351084	NOWBATTULA DATTA NAGA SAI	GLOBAL COMMUNICATION MEDIA
	2385351085	NUNNA PHANENDRA KUMAR	
	2385351086	PALAGANI DHARANI	
	2385351087	PANCHAKARLA ROSHITA SAI DURGA	
22	2385351088	PATHURI ANJANA	ONLINE TAXICAB SERVICE
	2385351089	PENTAPATI KALYANI	
	2385351090	PETA SHANMUKHA SIVA	
	2385351091	PILLI HARIKA	
23	2385351092	POLABATTULA UMA MAHESWARA RAO	SOCIRANK IDENTIFYING AND RANKING PREVALENT NEWS TOPICS USING SOCIAL MEDIA FACTORS
	2385351093	POTHABATHULA JAYA NAGA SATISH	
	2385351094	POTHULA BALA LAKSHMI PHANI SRINEELA	
	2385351095	POTHULA PAVANI SUNITHA	
24	2385351096	PUDI DEVI SREE	A NOVEL RECOMMENDATION MODEL REGULARIZED WITH USER TRUST AND ITEM RATINGS
	2385351097	ROUTU NAVYA	
	2385351098	RUTHALA S S VENKATA KRISHNA	
	2385351099	SALADI LAKSHMI PRASANNA	
25	2385351100	SANDAPU DURGA UMA MAHESWARI	URBAN STREET CLEANLINESS ASSESSMENT
	2385351101	SANNIDHI NAGA MACHARI KIRANMAI	
	2385351102	SARILLA ANKITHA LAKSHMI	
	2385351103	SHAIK ABBUBAKAR SIDDIQ	
26	2385351104	SINGIDI SRAVANI	ANALYSIS OF WOMEN SAFETY IN INDIAN CITIES
	2385351105	SIRRA LILLI	
	2385351106	SOBHANADRI ABHIRAM	
	2385351107	SONTENA DILEEP KUMAR	
27	2385351108	SRIPADA V P P S SRIKEERTHI	COLLABORATIVE FILTERING-BASED RECOMMENDATION OF SOCIAL VOTING
	2385351109	TALUPURI SHANMUKHA SRINIVAS	
	2385351110	TATI LOHITH SOWRYA	
	2385351111	THADICHERLA YASWANTH SUVEER	

B.V. RAJU COLLEGE

Vishnupur: Bhimavaram.

2024 SUMMER INTERNSHIP PROJECT BATCHES

Batch	Reg. No.	Student Name	Title of the Project
28	2385351112	THANGELLA BHARGAVI	E= HEALTH CENTER SYSTEM
	2385351113	THANMAI SEEMAKURTHI	
	2385351114	THOTA BHAVANA	
	2385351115	TIRUMALASETTI RAJESH	
29	2385351116	TIRUMANI MURALI	COMPLAINT MANAGEMENT SYSTEM
	2385351117	TULA BHAGYA SRI	
	2385351118	TUPAKULA SAIDIVYA	
	2385351119	VALAVALA BALA VENKATA SAI PRADEEP	
30	2385351120	VANAPALLI BHAGYA PRIYA	BUS SCHEDULING
	2385351121	VASA REVATHI	
	2385351122	VEDURUPARTHI N V V S SURYA PRASUNA	
	2385351123	VEGESNA SRI MEGHANA	
31	2385351124	VELAGALA GYANASRI	ONLINE SOCIAL NETWORK
	2385351125	VEMULA LAKSHMI KANTHAM	
	2385351126	YADLAPALLY HEMANTH	
	2385351127	YANAMANDRA SRI SAI SARVANI	
32	2385351128	YANDAMURI KARUN	STUDENT FEEDBACK SYSTEM
	2385351129	YARLAGADDA MEGHANA	
	2385351130	YARRA NIHARIKA SANTHOSHINI	
	2385351131	YERICHARLA LALITHA PRIYA DARSHINI	

B.V. RAJU COLLEGE

Vishnupur: Bhimavaram.

Closing Ceremony

B.V. RAJU COLLEGE

Vishnupur: Bhimavaram.

www.sayukth.com
info@sayukth.com
+91 826 826 4433

DID 20240205#002

05 FEB 2024

SaYukth – Internship Offer Letter

To,
Lakshmi Naga Venkata Jyothi. Kolla,
D/O Pallam Raju. Kolla,
jyothikolla2002@gmail.com

We would like to congratulate you on being selected for an internship with SaYukth Technologies Pvt. Ltd., Hyderabad. You are requested to join us on 12th February 2024. Your internship Period is for 03 to 06 months with the company as a full-time internship engineer. Kindly carry your own laptop during your Internship Program.

As an intern you will not receive any of the actual employee benefits that regular company employees receive. However, you will be part of the company for all day-to-day activities. No, stipend and accommodation will be provided.

During your internship you may have to access confidential business information belonging to the company. By accepting this offer of Internship, you acknowledge that you must keep all this information strictly confidential, and refrain from using it for your own purpose or from disclosing it to anyone outside the office. In addition, you agree upon the conclusion of your Internship. You will immediately return to the company all its documents. By accepting this offer, you agree that throughout your internship, you will observe all policies and practices governing the conduct of our business and employees.

Terms & Conditions:
1. In case of performance inefficiency, SaYukth has the right to terminate the Internship.
2. Students should plan the schedules in advance to attend internal and external examinations during internship with an authorized letter/email from the college.
3. Please accept this offer by replying "Accepted" to this email.

I hope that your association with the company will be successful and rewarding. Congratulations and we look forward to working with you.

SAYUKTH TECHNOLOGIES PVT. LTD. HYDERABAD

For SaYukth Technologies Private Limited,
Hyderabad

For SAYUKTH TECHNOLOGIES PVT. LTD.
P. Sandya Rani
Authorized

FreshGrad Incubator Co-ordinator

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info@sayukth.com
+91 826 826 4433

DID 20240205#004

05 FEB 2024

SaYukth – Internship Offer Letter

To,
Jayakala. Bodanki,
D/O Venkata Durga Rao. Bodanki,
jayakalabodanki097@gmail.com

We would like to congratulate you on being selected for an internship with SaYukth Technologies Pvt. Ltd., Hyderabad. You are requested to join us on 12th February 2024. Your internship Period is for 03 to 06 months with the company as a full-time internship engineer. Kindly carry your own laptop during your Internship Program.

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info@sayukth.com
+91 826 826 4433

DID 20240205#005

05 FEB 2024

SaYukth – Internship Offer Letter

To,
Yagna Harika. Karuturi,
D/O Srinivasa Rao. Karuturi,
yagnaharikakaruturi@gmail.com

We would like to congratulate you on being selected for an internship with SaYukth Technologies Pvt. Ltd., Hyderabad. You are requested to join us on 12th February 2024. Your internship Period is for 03 to 06 months with the company as a full-time internship engineer. Kindly carry your own laptop during your Internship Program.

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For SaYukth Technologies Private Limited,
Hyderabad

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info@sayukth.com
+91 826 826 4433

DID 20240205#001

05 FEB 2024

SaYukth – Internship Offer Letter

To,
Sai Tejasri. Geddada,
D/O Hare Rama Prasad. Geddada,
gsaitejasri665@gmail.com

We would like to congratulate you on being selected for an internship with SaYukth Technologies Pvt. Ltd., Hyderabad. You are requested to join us on 12th February 2024. Your internship Period is for 03 to 06 months with the company as a full-time internship engineer. Kindly carry your own laptop during your Internship Program.

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SAYUKTH TECHNOLOGIES PVT. LTD. HYDERABAD

For SaYukth Technologies Private Limited,
Hyderabad

For SAYUKTH TECHNOLOGIES PVT. LTD.
P. Sandhya Rani
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FreshGrad Incubator Co-ordinator

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info@sayukth.com
+91 826 826 4433

DID 20240205#003

05 FEB 2024

SaYukth – Internship Offer Letter

To,
Janaki. Korne,
D/O Venkateswara Rao. Korne,
janakikorne2002@gmail.com

We would like to congratulate you on being selected for an internship with SaYukth Technologies Pvt. Ltd., Hyderabad. You are requested to join us on 12th February 2024. Your internship Period is for 03 to 06 months with the company as a full-time internship engineer. Kindly carry your own laptop during your Internship Program.

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SAYUKTH TECHNOLOGIES PVT. LTD. HYDERABAD

For SaYukth Technologies Private Limited,
Hyderabad

For SAYUKTH TECHNOLOGIES PVT. LTD.
P. Sandya Rani
Authorized

FreshGrad Incubator Co-ordinator

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

SHORTTERM INTERNSHIP

ON

DATA SCIENCE

V^{TH} SEMISTER (2023-2024)

DUERATION: 2 WEEKS

TIMINGS:

BATCH 1: 09.30 AM - 11.30 PM

BATCH 2: 11.30 AM - 01.30 PM

BATCH 3: 02.30 PM -04.30 PM

PARTICIPATED GROUPS:

MECS

MPCS

MSCS

LIST OF STUDENTS

BATCH 1

TIMMING :9:00 AM TO 11:00 AM

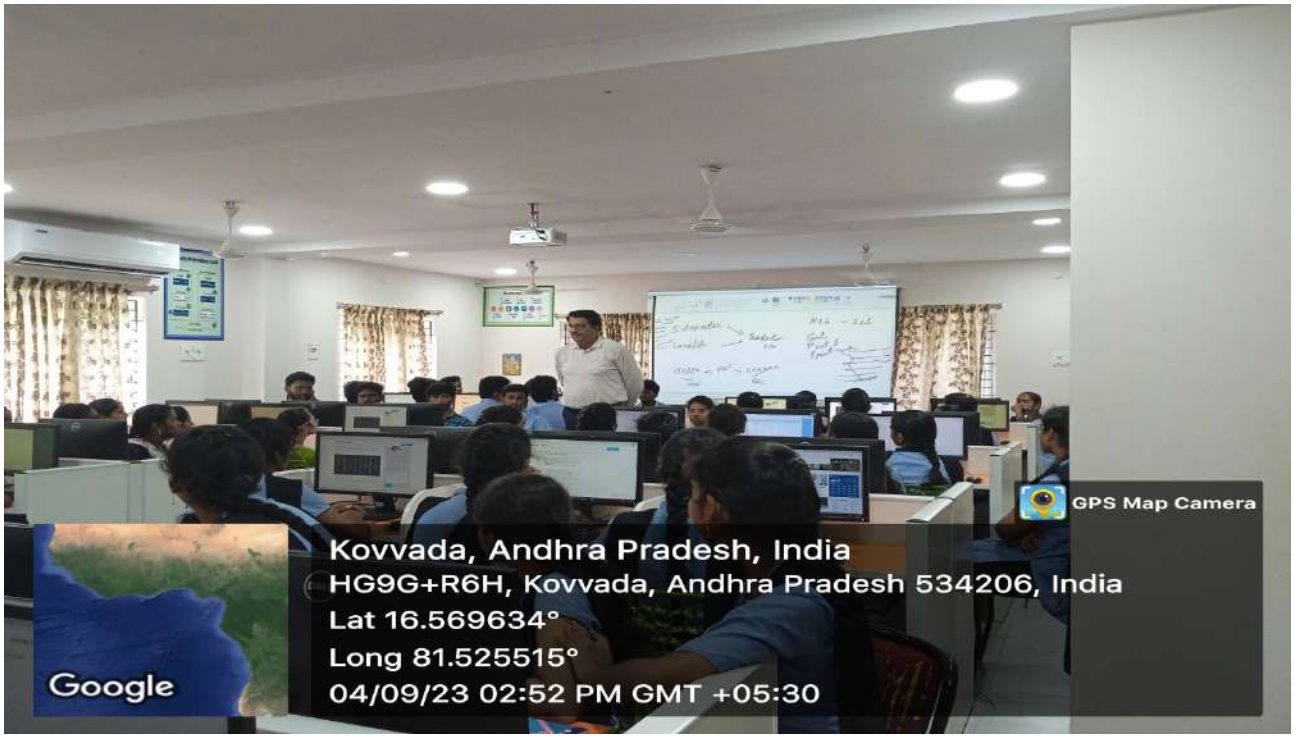
SNO	REDG .NO	NAME OF THE STUDENT	GROUP
1	213117109150	A NYNA HARSHITHA	MSCS
2	213117109151	A BINDESH SAI	MSCS
3	213117109153	A SRINIVAS	MSCS
4	213117109155	B SRAVANI	MSCS
5	213117109156	BH CHAYA SUSHMA SRI	MSCS
6	213117109157	BH KRISHNAM RAJU	MSCS
7	213117109158	B N S S MAHESH	MSCS
8	213117109159	B GOWRI PUSHPALATHA	MSCS
9	213117109160	B JAYA VARDHAN	MSCS
10	213117109161	CH V B SATAYANARAYANA	MSCS
11	213117109162	CH BASAVAIAH	MSCS
12	213117109163	CH HARIKA DURGA	MSCS
13	213117109164	CH MEGHANA	MSCS
14	213117109166	CH OMKAR	MSCS
15	213117109167	CH ALEKHYA	MSCS
16	213117109168	CH SAI SRUTHI	MSCS
17	213117109169	CH ROHIT NARASIMHA	MSCS
18	213117109170	CH AMRUTHA PHANI	MSCS
19	213117109171	CH P00JITHA	MSCS
20	213117109172	D GNANA PRASANNA	MSCS
21	213117109173	D USHA SRI	MSCS
22	213117109174	D PRASANTHI	MSCS
23	213117109175	E BINDHU SAI SRI	MSCS
24	213117109176	G HARSHAVARDHAN	MSCS
25	213117109177	G CHANDRA SWAROOPA	MSCS
26	213117109178	G NAGA PRAVALIKA	MSCS
27	213117109180	CH NEVANTH	MSCS
28	213117109183	G BINDHU PRIYA	MSCS
29	213117109184	G YASHWANTH	MSCS
30	213117109185	K DHANUSH SAI	MSCS
31	213117109187	K V K VARMA	MSCS
32	213117109188	K SRAVANI	MSCS
33	213117109189	K VARSHINI	MSCS
34	213117109190	K JEEVAN KUMAR	MSCS
35	213117109191	K SIVA SANDEEP	MSCS
36	213117109194	B KISHORE	MSCS
37	213117109195	K MOHAN SAI DURGESH	MSCS
38	213117109196	K ADHITYA	MSCS
39	213117109197	K SIDDARDHA	MSCS
40	213117109199	K V V S D PRASANTH	MSCS
41	213117109200	K LAVANYA	MSCS
42	213117109201	M REVATHI	MSCS
43	213117109202	L RAMYA	MSCS
44	213117109203	M RANGANAYAKULA	MSCS
45	213117109204	M V S P MANASA	MSCS
46	213117109206	M INDRA KUMAR	MSCS
47	213117109208	M D RAZIA	MSCS
48	213117109209	M BHAGYA LAKSHMI	MSCS
49	213117109210	M NAGA SAI	MSCS
50	213117109211	M VENKAT	MSCS

BATCH 2			
TIMINGS 11:30 AM TO 01:30 PM			
51	213117109212	N DANIEL	MSCS
52	213117109213	P S MAVULLESWARI	MSCS
53	213117109214	P DEVA GANESH	MSCS
54	213117109215	P J L NAGA DURGA	MSCS
55	213117109216	P SAHITI	MSCS
56	213117109217	P AKSHITHA	MSCS
57	213117109218	P ASHWITHA	MSCS
58	213117109220	P SHANMUKH	MSCS
59	213117109221	K POOJITHA	MSCS
60	213117109222	P HARI KIRAN MUTHYAM	MSCS
61	213117109223	R VIJAYA LAKSHNI	MSCS
62	213117109225	S BHAVYA	MSCS
63	213117109226	S JYOTHI	MSCS
64	213117109227	SK SAPHIYA	MSCS
65	213117109229	S NAGA PHANEENDRA	MSCS
66	213117109230	S VYSHNAVI	MSCS
67	213117109231	T SAI SRINEESHA	MSCS
68	213117109234	T CHAITANYA AJAY	MSCS
69	213117109232	T PRAVALIKKA	MSCS
70	213117109236	T TEJASWI	MSCS
71	213117109219	P SHUSHITHA SRI	MSCS
72	213117109235	T SRAVANI	MSCS
73	213117109237	V MADHU	MSCS
74	213117109238	V YATHIK	MSCS
75	213117109239	V SHARUN KUMAR	MSCS
76	213117109240	V LECHARD THOMAS	MSCS
77	213117109241	V GUNA VARDHAN	MSCS
78	213117109243	V JAYANTH	MSCS
79	213117109246	Z KUSUMA	MSCS
80	213117109259	S J V MANIDATTA	MSCS
81	213117102127	S AASRITHA LAKSHMI	MPCS
82	213117102129	TADI MAHIMAJYOTHI	MPCS
83	213117102121	SAIDANI DURGA LAKSHMI	MPCS
84	213117102134	THOTA GEETHA DURGA HARANI	MPCS
85	213117102110	PALURI DIVIJA KALPA	MPCS
86	213117102112	PECHETTI JAYA SRI	MPCS
87	213117102103	MEEGADA LEELA NAGA SOWJANYA	MPCS
88	213117102126	SEELAM SRAVANTHI	MPCS
89	213117102114	PENMATSA HYNDAVI	MPCS
90	213117102119	RUDRARAJU VASANTHI	MPCS
91	213117102139	UTA NAGA VENKATA DURGA NIKHIL	MPCS
92	213117102123	SALIPALLI RUKMINI SRI SATYA SIVANI	MPCS
93	213117102140	VADDI VENKATA N RAMA JAGADEESH TARUN	MPCS
94	213117102136	TIRUMALASETTY TANUJ KUMAR	MPCS
95	213117102098	LAKKOJU JAYA SURYA SESHU KUMAR	MPCS
96	213117102142	VELPURI SAI HEMANTH	MPCS
97	213117102141	VANAM BHARATH NIMMALU	MPCS

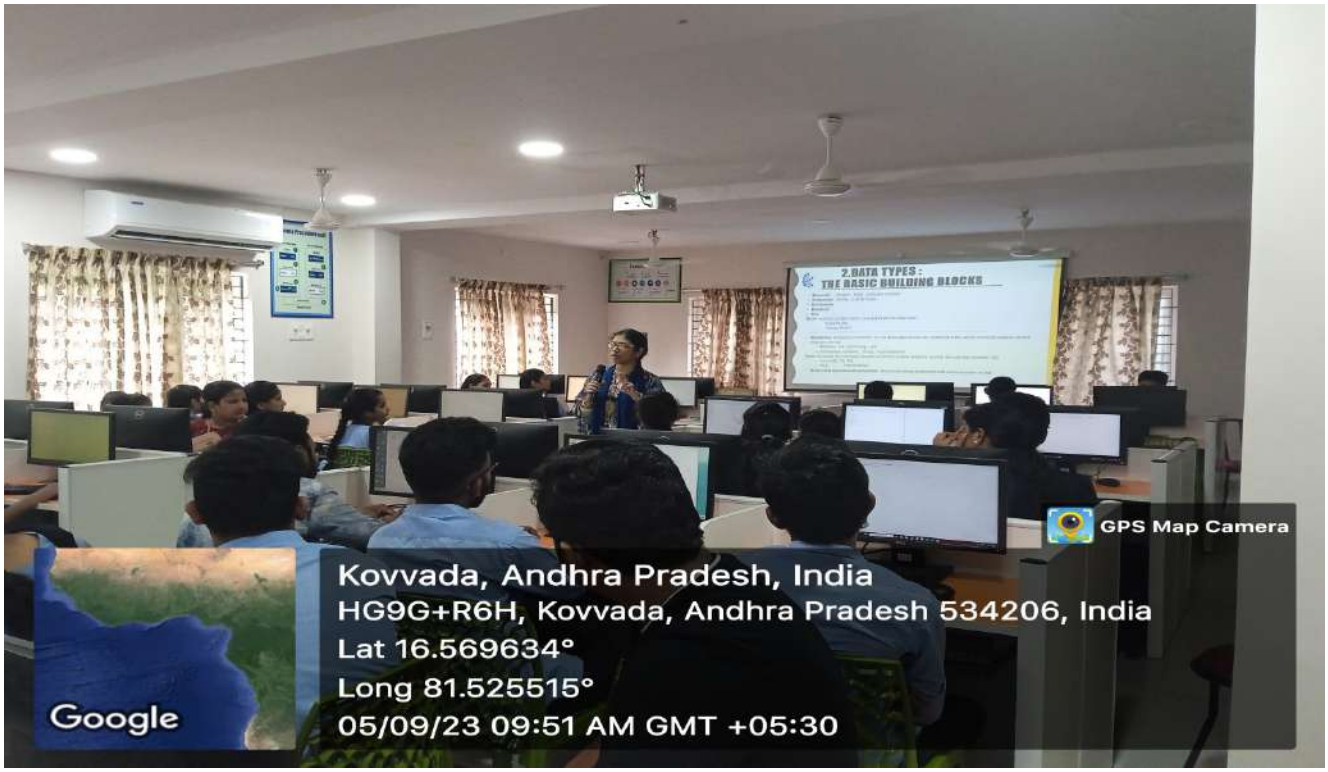
98	213117102093	KOTHURI GAYATHRI NAGA MANI	MPCS
99	213117102100	MAGHAM VENKATA NAVYA SRI	MPCS
100	213117102128	SHAIK SHILAR BEEBI	MPCS

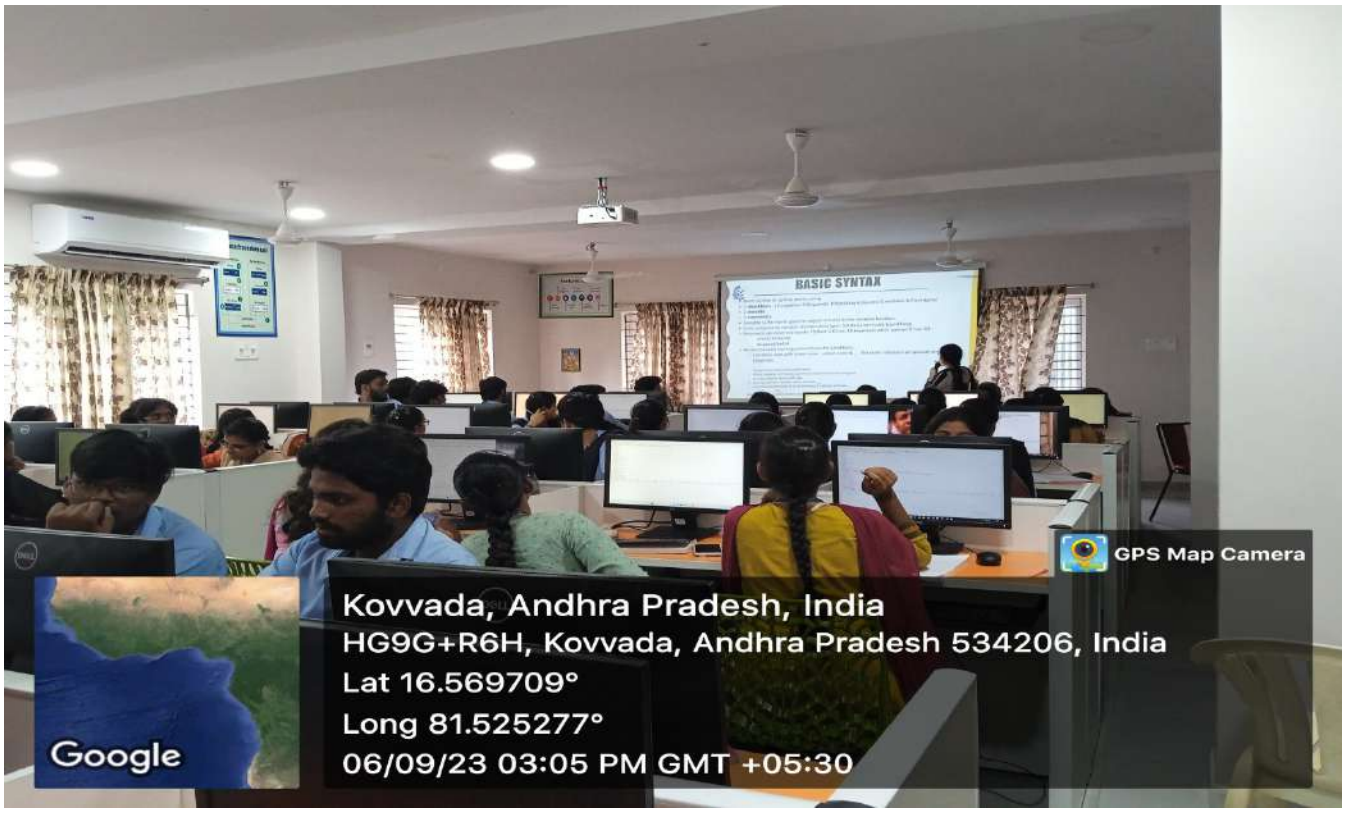
BATCH 3			
TIMINGS 02:30 AM TO 04:30 PM			
101	213117102124	SANNAMANDRA PRASANNA	MPCS
102	213117102108	NADIMINTI PUSHPA NAGA LAKSHMI MANASA	MPCS
103	213117102117	RAMBA CHAITANYA LAKSHMI NARAYANA	MPCS
104	213117102120	SABBITHI SUNNY	MPCS
105	213117102109	PALA KIRAN	MPCS
106	213117102099	LANKAPALLI RAVI KUMAR	MPCS
107	213117102057	BOMMIDI DINESH	MPCS
108	213117102096	KUNAPAREDDY BHAVANA	MPCS
109	213117102097	KUNAPAREDDY BHUVANA	MPCS
110	213117102058	CHALLA RESHMA SIVANI	MPCS
111	213117137301	ADABALA MRUDHULA SATYA SRI	MECS
112	213117137397	THOTA NAGA BHARGAVI	MECS
113	213117137394	TAMMA KOTI YASASWI **(PH)**	MECS
114	213117137304	BANDARU NAGA SAI SRAVANI	MECS
115	213117137360	KOLLI RAMYA	MECS
116	213117137321	DEVATHA VENKATA SRAVANTHI	MECS
117	213117137406	VENNA PUJA SATYA SREE PRAVALLIKA	MECS
118	213117137339	INDUKURI HEMITHA PHANI SUJITHA SRI	MECS
119	213117137317	DANDU SREYA	MECS
120	213117137329	GANDHAM HEMA CHANDRIKA	MECS
121	213117137310	CHEERALA DURGA BHAVANI	MECS
122	213117137392	SHAIK SHOAIB ALI	MECS
123	213117137316	DAKI JONS MELODY	MECS
124	213117137393	SHEIK SHABEENA	MECS
125	213117137337	GUDLA NAGA PAVAN SAI	MECS
126	213117137372	NAGARAJU BHARATH KUMAR VARMA	MECS
127	213117137305	BANDARU PUJA NAGA MOULI	MECS
128	213117137311	CHENNU LAKSHMI PRASANTHI	MECS
129	213117137363	KOSURI NAMITHA SRI	MECS
130	213117137405	VEMPATAPU MADHAVI DURGA	MECS
131	213117137377	PAILA MONALI	MECS
132	213117137303	AKULA JAYA SUMA GAYATHRI	MECS
133	213117137368	MOGANTI SAI VYSHNAVI	MECS
134	213117137400	UDAYANA TRILOCHANA	MECS
135	213117137335	GUBBALA CHANDINI	MECS
136	213117137353	KATREDDI CHAITANYA DURGA	MECS
137	213117137315	CHODISETTY BHAVANI S R SAMHITHA	MECS
138	213117137309	CHAKKA SRI NIKITHA	MECS
139	213117137350	KARRI NAGA VENKATA PAVANI MOUNIKA	MECS
140	213117137344	JOGURIPATI KRISHAN KARTHEEK	MECS
141	213117137313	CHINNAPARAPU MANOJ	MECS
142	213117137346	KADALI SAI MANOJ	MECS
143	213117137407	VOLIPILLI GOWRI MALLIKA	MECS
144	213117137370	MURAPALA JYOTHIKA	MECS
145	213117137352	KATAKAM BHAVANA	MECS
146	213117137349	K GOPI	MECS

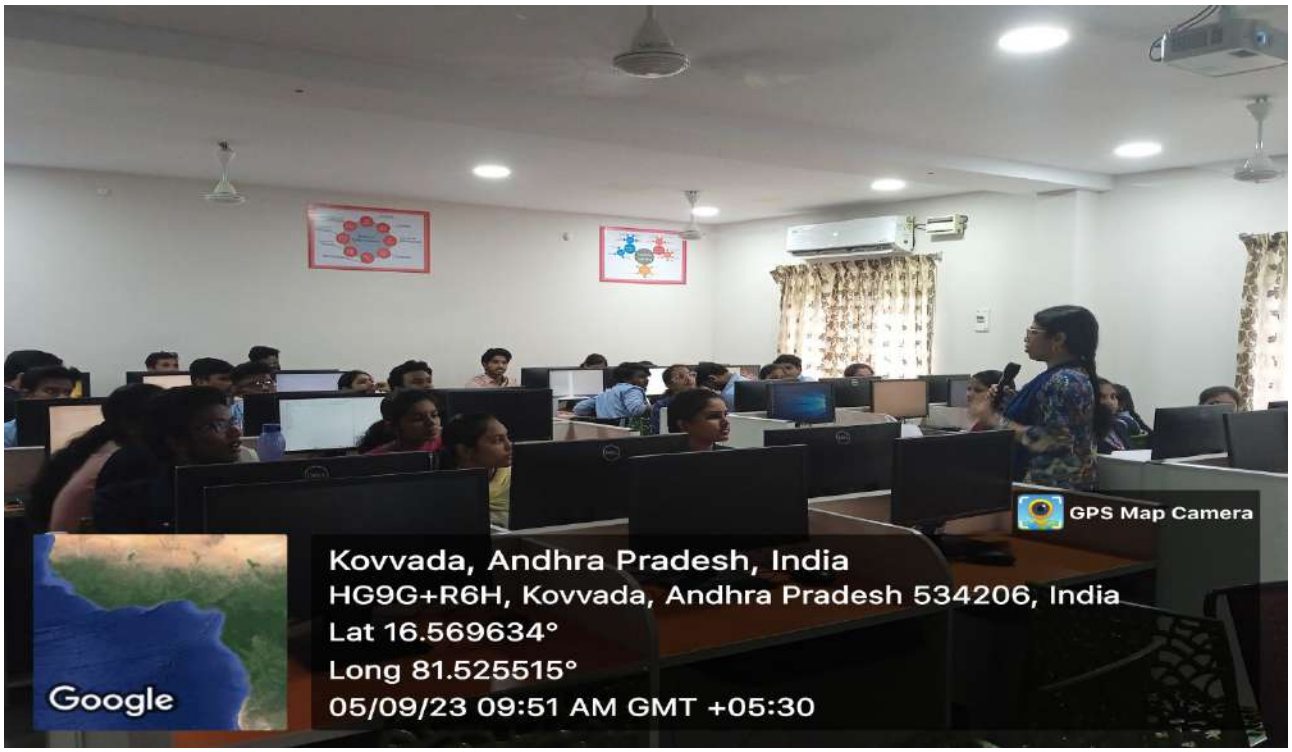
OPENING NOTE BY PRINCIPAL SIR



LECTURE ON DATA SCIENCE






GPS Map Camera
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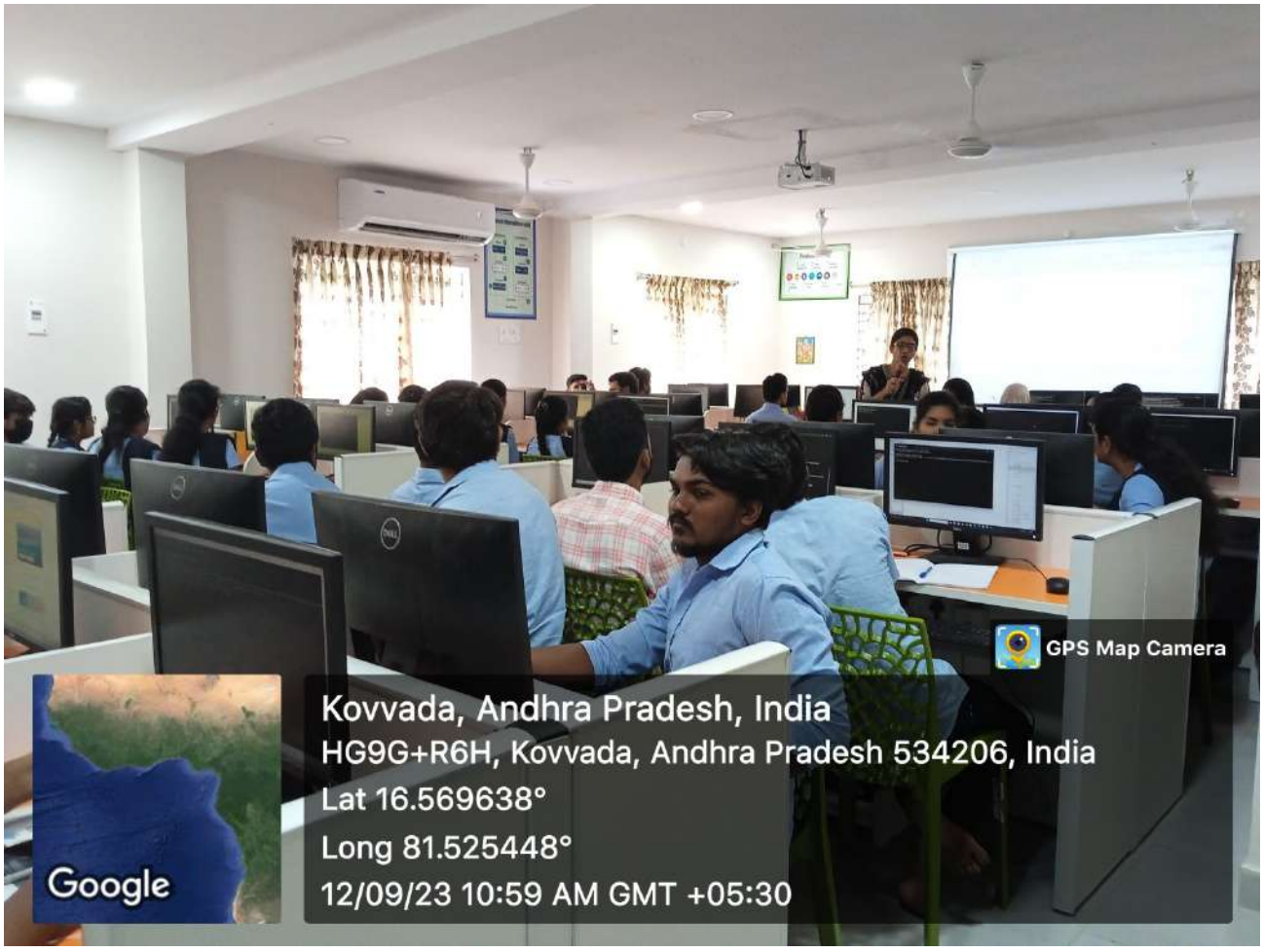
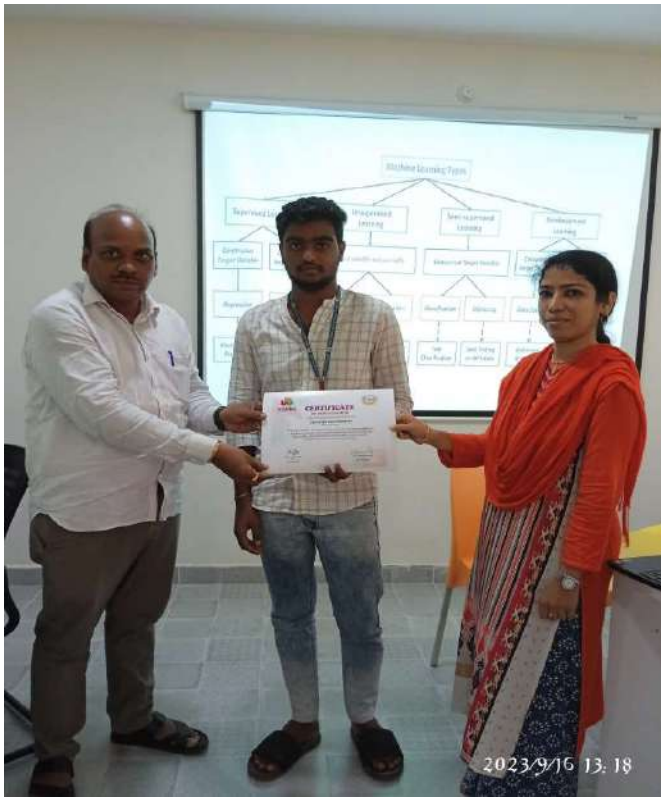
HG9G+R6H, Kovvada, Andhra Pradesh 534206, India
Lat 16.569634°
Long 81.525515°
05/09/23 09:51 AM GMT +05:30
Google


GPS Map Camera
Kovvada, Andhra Pradesh, India
HG9G+R6H, Kovvada, Andhra Pradesh 534206, India
Lat 16.569638°
Long 81.525448°
12/09/23 10:59 AM GMT +05:30
Google

CLOSING NOTE BY PRINCIPAL SIR AND VICE PRINCIPAL SIR

STUDENTS FEEDBACK

CERTIFICATE PRESENTATION



B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

DATASCIENCE BATCH 1

SNO	REDG .NO	NAME OF THE STUDENT	1	2	3	4	5	6	7	8	9	10	11
2	213117109150	A NYNA HARSHITHA											
3	213117109151	A BINDESH SAI											
4	213117109153	A SRINIVAS											
5	213117109155	B SRAVANI											
6	213117109156	BH CHAYA SUSHMA SRI						P					
7	213117109157	BH KRISHNAM RAJU											
8	213117109158	B N S S MAHESH											
9	213117109159	B GOWRI PUSHPALATHA						P					
10	213117109160	B JAYA VARDHAN						P					
11	213117109161	CH V B SATAYANARAYANA						P					
12	213117109162	CH BASAVAIAH											
13	213117109163	CH HARIKA DURGA						P					
14	213117109164	CH MEGHANA											
15	213117109166	CH OMKAR						P					
16	213117109167	CH ALEKHYA						P					
17	213117109168	CH SAI SRUTHI						P					
18	213117109169	CH ROHIT NARASIMHA						P					
19	213117109170	CH AMRUTHA PHANI											
20	213117109171	CH POOJITHA						P					
21	213117109172	D GNANA PRASANNA						P					
22	213117109173	D USHA SRI						P					
23	213117109174	D PRASANTHI											
24	213117109175	E BINDHU SAI SRI						P					
25	213117109176	G HARSHAVARDHAN											
26	213117109177	G CHANDRA SWAROOPA						P					
27	213117109178	G NAGA PRAVALIKA						P					
28	213117109180	CH NEVANTH						P					
29	213117109183	G BINDHU PRIYA						P					
30	213117109184	G YASHWANTH						P					
31	213117109185	K DHANUSH SAI						P					
32	213117109187	K V K VARMA											
33	213117109188	K SRAVANI						P					
34	213117109189	K VARSHINI						P					
35	213117109190	K JEEVAN KUMAR						P					
36	213117109191	K SIVA SANDEEP											
38	213117109194	B KISHORE						P					

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

DATA SCIENCE BATCH 2

SNO	REDG .NO	NAME OF THE STUDENT		1	2	3	4	5	6	7	8	9	10	11	12
1	213117109210	M NAGA SAI	MSCS		P						P				
2	213117109211	M VENKAT	MSCS		P						P				
3	213117109212	N DANIEL	MSCS		P						A				
4	213117109213	P S MAVULLESWARI	MSCS		P						P				
5	213117109214	P DEVA GANESH	MSCS		P						P				
6	213117109215	P J L NAGA DURGA	MSCS		P						P				
7	213117109216	P SAHITI	MSCS		A						A				
8	213117109217	P AKSHITHA	MSCS		A						P				
9	213117109218	P ASHWITHA	MSCS		P						P				
10	213117109220	P SHANMUKH	MSCS		P						P				
11	213117109221	K POOJITHA	MSCS		P						P				
12	213117109222	P HARI KIRAN MUTHYAM	MSCS		P						P				
13	213117109223	R VIJAYA LAKSHNI	MSCS		P						P				
14	213117109225	S BHAVYA	MSCS		P						P				
15	213117109226	S JYOTHI	MSCS		P						P				
16	213117109227	SK SAPHIYA	MSCS		P						P				
17	213117109229	S NAGA PHANEENDRA	MSCS		P						P				
18	213117109230	S VYSHNAVI	MSCS		P						A				
19	213117109231	T SAI SRINEESHA	MSCS		P						P				
20	213117109234	T CHAITANYA AJAY	MSCS		P						A				
21	232	T PRAVALIKKA	MSCS		P						A				
22	236	T TEJASWI	MSCS		P						A				
23	219	P SHUSHITHA SRI	MSCS		P						A				
24	213117109235	T SRAVANI	MSCS		P						P				
25	213117109237	V MADHU	MSCS		P						A				
26	213117109238	V YATHIK	MSCS		A						P				
27	213117109239	V SHARUN KUMAR	MSCS		P						P				
28	213117109240	V LECHARD THOMAS	MSCS		P						P				
29	213117109241	V GUNA VARDHAN	MSCS		A						A				
30	213117109243	V JAYANTH	MSCS		P						A				
31	213117109246	Z KUSUMA	MSCS		P						P				
32	213117109259	S J V MANIDATTA	MSCS		P						P				
33	213117102127	S AASRITHA LAKSHMI	MPCS		P						P				
34	213117102129	TADI MAHIMAJYOTHI	MPCS		P						P				
35	213117102121	SAIDANI DURGA LAKSHMI	MPCS		P						P				
36	213117102134	HOTA GEETHA DURGA HARA	MPCS		P						P				
37	213117102110	PALURI DIVIJA KALPA	MPCS	A	P						P				
38	213117102112	PECHETTI JAYA SRI	MPCS		P						P				
39	213117102103	EGADA LEELA NAGA SOWJAN	MPCS		P						P				

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

MSCS-DATASCIENCE

BATCH-3

SNO	REDG .NO	NAME OF THE STUDENT	GROUP	1	2	3	4	5	6	7	8	9	10	11	12
1	213117102093	KOTHURI GAYATHRI NAGA MANI	MPCS												
2	213117102100	MAGHAM VENKATA NAVYA SRI	MPCS												
3	213117102128	SHAIK SHILAR BEEBI	MPCS												
4	213117102124	SANNAMANDRA PRASANNA	MPCS												
5	213117102108	NADIMINTI PUSHPA NAGA LAKSHMI MANASA	MPCS												
6	213117102117	RAMBA CHAITANYA LAKSHMI NARAYANA	MPCS	A											
7	213117102120	SABBITHI SUNNY	MPCS												
8	213117102109	PALA KIRAN	MPCS												
9	213117102099	LANKAPALLI RAVI KUMAR	MPCS												
10	213117102057	BOMMIDI DINESH	MPCS												
11	213117102096	KUNAPAREDDY BHAVANA	MPCS												
12	213117102097	KUNAPAREDDY BHUVANA	MPCS												
13	213117102058	CHALLA RESHMA SIVANI	MPCS												
14	213117137301	ADABALA MRUDHULA SATYA SRI	MECS												
15	213117137397	THOTA NAGA BHARGAVI	MECS												
16	213117137394	TAMMA KOTI YASASWI (PH)	MECS												
17	213117137304	BANDARU NAGA SAI SRAVANI	MECS												
18	213117137360	KOLLI RAMYA	MECS												
19	213117137321	DEVATHA VENKATA SRAVANTHI	MECS												
20	213117137406	VENNA PUJA SATYA SREE PRAVALLIKA	MECS												
21	213117137339	INDUKURI HEMITHA PHANI SUJITHA SRI	MECS												
22	213117137317	DANDU SREYA	MECS												
23	213117137329	GANDHAM HEMA CHANDRIKA	MECS												
24	213117137310	CHEERALA DURGA BHAVANI	MECS												
25	213117137392	SHAIK SHOAIB ALI	MECS												
26	213117137316	DAKI JONS MELODY	MECS												
27	213117137393	SHEIK SHABEENA	MECS												
28	213117137337	GUDLA NAGA PAVAN SAI	MECS												
29	213117137372	NAGARAJU BHARATH KUMAR VARMA	MECS												
30	213117137305	BANDARU PUJA NAGA MOULI	MECS												
31	213117137311	CHENNU LAKSHMI PRASANTHI	MECS												
32	213117137363	KOSURI NAMITHA SRI	MECS												
33	213117137405	VEMPATAPU MADHAVI DURGA	MECS												
34	213117137377	PAILA MONALI	MECS												
35	213117137303	AKULA JAYA SUMA GAYATHRI	MECS												
36	213117137368	MOGANTI SAI VYSHNAVI	MECS												
37	213117137400	UDAYANA TRILOCHANA	MECS												
38	213117137335	GUBBALA CHANDINI	MECS												
39	213117137353	KATREDDI CHAITANYA DURGA	MECS												
40	213117137315	CHODISETTY BHAVANI S R SAMHITHA	MECS					A							
41	213117137309	CHAKKA SRI NIKITHA	MECS												
42	213117137350	KARRI NAGA VENKATA PAVANI MOUNIKA	MECS												
43	213117137344	JOGURIPATI KRISHAN KARTHEEK	MECS												
44	213117137313	CHINNAPARAPU MANOJ	MECS												

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

SHORTTERM INTERNSHIP

ON

NODE.JS & REACT.JS

V^{TH} SEMISTER (2023-2024)

DUERATION: 2 WEEKS

TIMINGS:

BATCH 1: 10:00 AM TO 01:00 PM

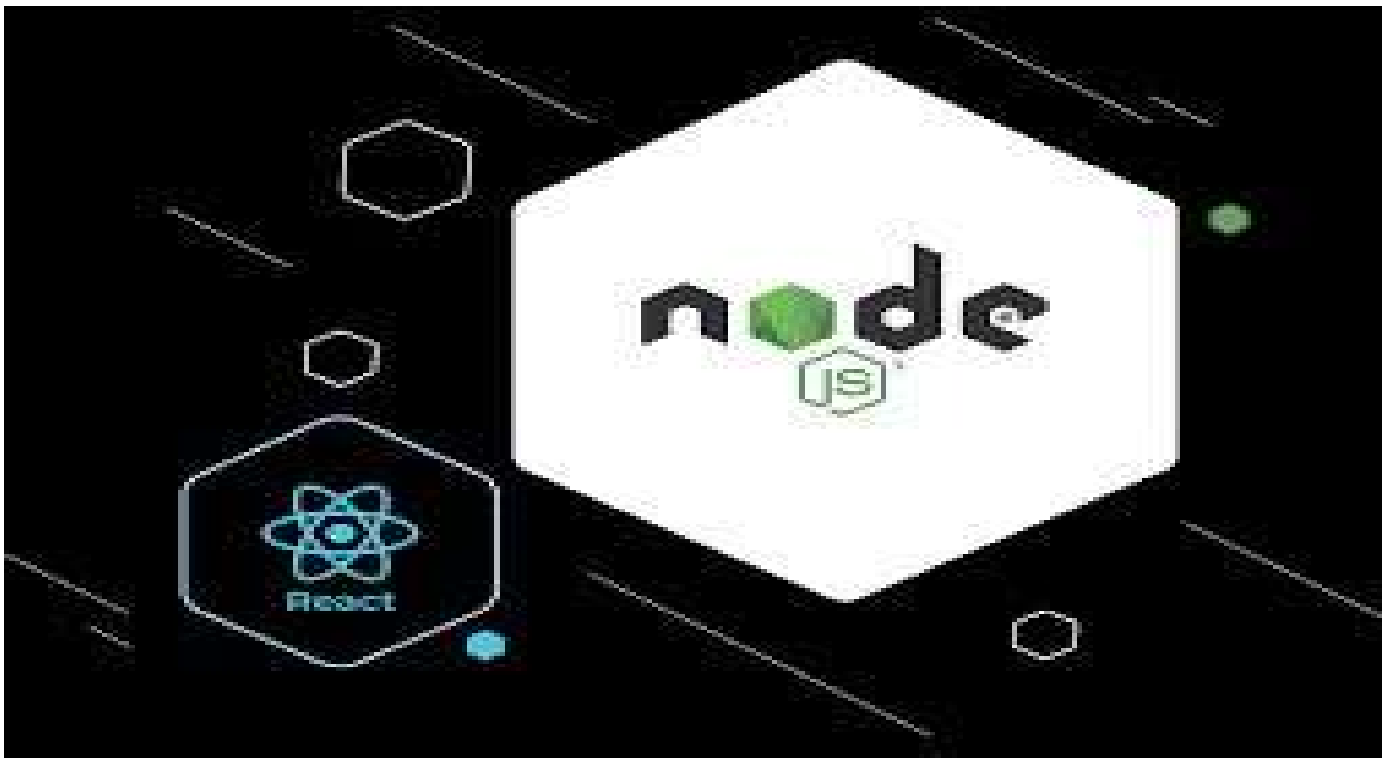
BATCH 2: 02:00 AM TO 05:00 PM

PARTICIPATED GROUPS:

MECS

MPCS

MSCS



LIST OF STUDENTS

sno	Name (as per SSC certificate)	Redg No	Group
1	A SUMA DEVI	213117137302	MECS
2	AAVALA VANITHA	213117102046	MPCS
3	ADDALA SUMA DEVI	213117137302	MECS
4	ALAMURI H.N.S.SRI.LAKSHMI	213117109149	MSCS
5	ALAMURI H.N.S.SRI.LAKSHMI	213117109149	MSCS
6	ANNAM MRUDULA MADHUMITHA	213117109152	MSCS
7	BALLA J N D R SURYA KIRAN	213117102052	MPCS
8	BANDARU SUBHASH	213117137306	MECS
9	BARNALA SALMAN RAJU	213117137307	MECS
10	BHAVANA MUDUNURI	213117102053	MPCS
11	BONAM.KARUNAKAR	213117137308	MECS
12	CHINTALA SUNEETHA	213117102060	MPCS
13	CHINTAPALLI HARI KRISHNA	213117137314	MECS
14	CHITLURI VENKATA TIRUMALA RAO	213117102061	MPCS
15	DARAPUREDDY TARUN BABU	213117137318	MECS
16	DASARI RAVI TEJA SRI VENKATA SHYAM	213117137319	MECS
17	DEVAKI VASU SATYA SAI MANIKANTA	213117137320	MECS
18	DEVU TEJA SAI	213117137322	MECS
19	DOLLA SATISH	213117102066	MPCS
20	DONTHALA VENKATA RAMANA	213117137323	MECS
21	DONTHALA VENKATA RAMANA	213117137323	MECS
22	DULAM GOPI SANKAR	213117137324	MECS
23	DUNDI.ASISH KUMAR	213117137325	MECS
24	EBBA DEVA MANIKANTA	213117137326	MECS
25	EBBA.RADHIKA PHANI	213117102068	MPCS
26	EDI.VIJAYA BABU	213117137327	MECS
27	G. G. A. VARSHINI	213117137334	MECS
28	GALIDEVARA MANIKANTA	213117137328	MECS
29	GANDREDDY JAGAN KUMAR	213117137331	MECS
30	GANTA DURGA DHAARANI	213117102071	MPCS
31	GODI OMI SARVAGNYA	213117109182	MSCS
32	GOKETI VENKATRAO	213117137333	MECS
33	GOTTUMUKKALA TEJASWINI	213117102073	MPCS
34	GUDIVADA HEMA DURGA MAHALAKSHMI	213117137336	MECS
35	GUDIVADA HEMA DURGA MAHALAKSHMI	213117137336	MECS
36	GUNTI KUMAR BABU	213117137338	MECS

37	GUNTURI MANI MEGHANA DEVI SRI	213117102077	MPCS
38	JAKKAMSETTI SRAVYA	213117102078	MPCS
39	JALASUTHRAM DURGA BHAVANI	213117137340	MECS
40	JALEM GARGI PRIYA	213117137341	MECS
41	JAYAMANGALA PRIYA DARSHINI	213117137342	MECS
42	JOGI ASHOK BABU	213117137343	MECS
43	KADALI MOUNIKA	213117137345	MECS
44	KALIDINDI G V SIVA RAMA RAJU	213117137347	MECS
45	KALIDINDI HEMALATHA	213117109186	MSCS
46	KALIDINDI LAKSHMI SARANYA	213117102084	MPCS
47	KALIDINDI NAGA SAI SURENDRA VARMA	213117137348	MECS
48	KARRI CHANDRA SAI REDDY	213117102087	MPCS
49	KARUMUJJI KALYAN RAM	213117137351	MECS
50	KATREDDI YETHENDRA SWAMY	213117137354	MECS
51	KATTA NAGA VENKATA SATYANARAYANA	213117137355	MECS
52	KATTA TRISHA	213117137356	MECS
53	KATTA VENKATA LOKESH	213117137357	MECS
54	KETHA DIVYA JYOTHI	213117109192	MSCS
55	KETHA SUKESH	213117137358	MECS
56	KILLAMPALLI YASASWINI	213117109193	MSCS
57	KODAMANCHILI CHARAN TEJA	213117137359	MECS
58	KOLLI YESU SURESH BABU	213117102091	MPCS
59	KOPPARTHI KIRAN SAI	213117137362	MECS
60	KOTHAPALLI ARYESH	213117137364	MECS
61	MALLULA.APARNA	213117102101	MPCS
62	MANTENA HIMA KEERTHI LOHITHA	213117102102	MPCS
63	MANTENA TULASI DEVI	213117109205	MSCS
64	MANTHENA NAGA SRUTHI SRI	213117137366	MECS
65	MANUPATI RAJESH	213117137367	MECS
66	MOHAMAD ANASS	213117137369	MECS
67	MONDURI. SRIVALLI	213117102105	MPCS
68	MULAGAPATI KEERTHI SREE	213117102106	MPCS
69	MURAPALA JYOTHIKA	213117137370	MECS
70	MYLA SAMSON	213117137371	MECS
71	MYLAVARAPU BHANU	213117102107	MPCS
72	NAKKA. KALEBU	213117137373	MECS
73	NANDAMURI PRAVEEN KUMAR	213117137374	MECS
74	NEELAPU SATYA PRAKASH	213117137375	MECS
75	PECHETTI BHANU SAI SREE	213117137379	MECS
76	PEDAMALLU SREEJA	213117137380	MECS

77	PEDAPUDI NANDINI	213117137381	MECS
78	PENMATSA JEESHITHA	213117137382	MECS
79	PENMETSA PHANI SAI RAMANA VARMA	213117137383	MECS
80	PICHIKALA HARSHA NANDINI	213117137384	MECS
81	RAAGU DEVI NAVYA SRI	213117137387	MECS
82	RAJANALA HEMA GOWRI	213117102116	MPCS
83	RAVULA VENKATA LAKSHMI DEEPIKA	213117102118	MPCS
84	ROMPICHERLA.SAI BHAVANI	213117137388	MECS
85	RUDRARAJU SAI MADHU NISHA	213117137389	MECS
86	SAGI RADHA GAYATHRI	213117109224	MSCS
87	SAIDU JAYA DURGA	213117102122	MPCS
88	SANABOYINA THANU SRI	213117137390	MECS
89	SATTINENI NAGA SATYA MOHANA	213117102125	MPCS
90	SHANMUKHASAI	213117137361	MECS
91	TAMMU JHANSI RANI	213117102131	MPCS
92	TAMMU SAI TEJA	213117137395	MECS
93	THOTA BHUVANA NAGA LAKSHMI DURGA	213117137396	MECS
94	THOTA RAVI SANKAR NAIDU	213117137398	MECS
95	THOTA SWARNA KUMARI	213117137399	MECS
96	TIRUMALASETTI TINOJ SIVA SAI MANIKANTA	213117102135	MPCS
97	TIRUMANI SHANMUKHA SAI	213117102133	MPCS
98	UDDISI NAGA SAI MAHESH AYYAPPA	213117137401	MECS
99	UPPADA.LAKSHMI	213117102137	MPCS
100	UPPALAPATI SAI LAKSHMI	213117137402	MECS
101	VEGESNA HEMANJALI	213117109244	MSCS
102	VEGESNA SITARAMARAJU	213117137403	MECS
103	VELIVELA KIRAN VEERA VENKATA SATYANARAYANA	213117137404	MECS
104	VENDRA PAVANI	213117102144	MPCS
105	YELURI LAKSHMI PRASANNA	213117102147	MPCS

OPENING NOTE BY PRINCIPAL SIR

LECTURE ON NODE.JS


B.V.RAJU COLLEGE
GPS Map Camera
Kovvada, Andhra Pradesh, India
HG9G+R6H, Kovvada, Andhra Pradesh 534206, India
Lat 16.569638°
Long 81.525448°
12/09/23 11:09 AM GMT +05:30
Google


GPS Map Camera
Kovvada, Andhra Pradesh, India
HG9G+R6H, Kovvada, Andhra Pradesh 534206, India
Lat 16.569589°
Long 81.525486°
13/09/23 10:35 AM GMT +05:30
Google

CLOSING NOTE BY PRINCIPAL SIR AND VICE PRINCIPAL SIR

CERTIFICATE PRESENTATION


RBCRON
2023/9/23 16:49


2023/9/23 16:54

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

NODE JS

BATCH-1

Sno	Name	Group	1	2	3	4	5	6	7	8	9	10	11	12
1	K.TRISHA	MECS		P										
2	P. NANDHINI	MECS												
3	T. SWARNA KUMARI	MECS		P										
4	S. TANU SRI	MECS		P										
5	P. BHANU SAI SRI	MECS		P										
6	R. DEVI NAVYA SRI	MECS		P										
7	R. SAI BHAVANI	MECS		P										
8	K. MOUNIKA	MECS		P										
9	J. GARGI PRIYA	MECS												
10	A• SUMA DEVI	MECS		P										
11	G. G. A. VARSHINI	MECS		P										
12	G.H. D. MAHA LAKSHMI	MECS		P										
13	K.G.V.S. RAMA RAJU	MECS		P										
14	G. VENKAT RAO	MECS		P										
15	E. DEVA MANIKANTA	MECS		P										
16	G. JAGAN KUMAR	MECS		P										
17	G. GOPI SANKAR	MECS												
18	K .N. S. SURENDRA VAMA	MECS		P										
19	B. SUBASH	MECS		P										
20	D. VENKATA RAMANA	MECS		P										
21	K. YETHENDRA SWANY.	MECS		P										
22	CH. HARI KRISHNA	MECS		P										
23	G. MANKANTA	MECS		P										
24	D. RAVI TEJA	MECS		P										
25	D. TEJA SAI	MECS		P										
26	K. KALYAN RAM	MECS		P										
27	D. V.S.S. MANKANTA	MECS		P										
28	J. DURGA BHAVANI	MECS		P										
29	D. TARUN BABU	MECS		P										
30	J. ASHOK BABU	MECS		P										
31	E. VIJAY BABU	MECS		P										
32	G. KUMARBABU	MECS		P										
33	B .SALMAN RAJU	MECS		P										
34	K. SUKESH	MECS		P										
35	K.V. LOKESH	MECS		P										
36	M. RAJOSH, Rajesh	MECS		P										
37	T. RAVISHANKER NAIDU	MECS		P										
38	K KIRAN SAI	MECS		P										
39	N. KALEBU	MECS		P										
40	T. SAI TEJA	MECS		P										
41	N. SATYA PRAKASH	MECS		P										
42	V. SITA RAMA RAJU	MECS		P										
43	MD. ANAS	MECS		P										
44	K. CHARAN TEJA	MECS		P										
45	R. MADHU NISHA	MECS		P										
46	U. N. S.N. AYYAPPA	MECS		P										
47	K. ARYESH,	MECS		P										
48	M. SAMSON	MECS		P										
49	V. K. V.V. SATYANARAYANA	MECS		P										
50	K. N. V. SATYANARAYANA	MECS												
	N. Praveen Kumar	MECS		P										
	k. shanmukh sai	MECS		P										

B V RAJU COLLEGE
VISHNUPUR :: BHIMAVARAM

NODE JS

BATCH-2

	Sno	Name	Group	1	2	3	4	5	6	7	8	9	10	11	12
366	1	M. NAGA SRUTHISRI	MECS												
362	2	P. JEESHITHA	MECS												
384	3	P. HARSHA NANDINI	MECS												
396	4	T. BHUVANA NAGA LAKSHMI DURGA	MECS												
380	5	P SREEJA	MECS												
383	6	P PHANI SAI RAMANA VARMA	MECS												
342	7	J. PRIYADARSHINI	MECS												
325	8	D ASISH KUMARU	MECS												
308	9	B KARUNAKAR - Ist Batch	MECS												
402	10	U SAI LAKSHMI	MECS												
084	11	K. L. SARANYA	MPCS												
102	12	M. H.K. LOHITHA	MPCS												
077	13	G. M. MEGHANA	MPCS												
118	14	R. V. L. DEEPIKA	MPCS												
125	15	S.N.S. MOHANA	MPCS												
122	16	S. JAYADURGA	MPCS												
131	17	T. JHANSI RANI	MPCS												
101	18	M. APARNA	MPCS												
105	19	M. SRIVALLI	MPCS												
052	20	B. J.N. D. R. SURYA KIRAN	MPCS												
135	21	T. CHANMUCH SAS Shanmuk Sai	MPCS												
037	22	G. RAVIKIRAN	MPCS												
131	23	T TINOJ	MPCS												
116	24	R HEMA GOWRI	MPCS												
180	25	T. JAYA PRAKASH	MPCS												
106	26	M. KEERTHI SREE	MPCS												
065	27	D. LAKSHMI PRAVALLIKA	MPCS												
061	28	CH. VENKATA TIRUMALA RAO	MPCS												
066	29	D. SATISH	MPCS												
087	30	K CHANDRA SAI REDDY	MPCS												
092	31	K. JYOTHI GAYATHRI	MPCS												
53	32	M. BHAVANA	MPCS												
091	33	K. SURESH BABU	MPCS												
078	34	J. SRAVYA	MPCS												
137	35	U. LAKSHMI	MPCS												
147	36	Y. LAKSHMI PRASANNA	MPCS												
107	37	M. BHANU	MPCS												
071	38	G. DURGA DHAARANI	MPCS												
046	39	A. VANITHA	MPCS												
073	40	G. TEJASWINI	MPCS												
089	41	K PRANATHI	MPCS												
060	42	CH. SUNEETHA	MPCS												
068	43	E. RADHIKA PHANI	MPCS												
244	44	V. HEMANJALI	MSCS												
205	45	M. TULASI DEVI	MSCS												
224	46	S. RADHA GAYATHRI	MSCS												
182	47	G. OMI SARVAGNYA	MSCS												
186	48	K. HEMALATHA	MSCS												
191	49	K. DIVYA JYOTHIKA	MSCS												
152	50	A. MRUDULA MADHUMITHA	MSCS												

ATHKS Lakshmi & Yeswanth

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

SHORTTERM INTERNSHIP

ON

UI & UX DESIGN

V^{TH} SEMISTER (2023-2024)

DUERATION: 2 WEEKS

TIMINGS:

BATCH 1: 10:00 AM TO 01:00 PM

BATCH 2: 02:00 AM TO 05:00 PM

PARTICIPATED GROUPS:

MECS

MPCS

MSCS

B.COM

LIST OF STUDENTS
BATCH-1

Sno	Redg No	Name	GROUP
1	213117137312	CH SURYA PRAVEEN	MECS
2	213117137378	PALLEM CHINNA ABRAHAM	MECS
3	213117137330	G SHANTHI PRIYA	MECS
4	213117137385	P MOUNIKA	MECS
5	213117109219	P SHUSHITHA SRI	MSCS
6	213117109245	V SHIVAJI RAJU	MSCS
7	213117102048	A HARINADH SAI	MPCS
8	213117102050	A SAI CHARAN	MPCS
9	213117102054	B BALA LAKSHMI PRASANNA	MPCS
10	213117102051	B BHAVANI SAI KUMARI	MPCS
11	213117102055	B JHANSI MAHA LAKSHMI	MPCS
12	213117102056	B SAI BHAGYA LAKSHMI SRI MANASA	MPCS
13	213117102059	CH ANAND	MPCS
14	213117102063	CH DINESH	MPCS
15	213117102062	CH SWATHI	MPCS
16	213117102067	D MEGHANA	MPCS
17	213117102064	D MOUNIKA	MPCS
18	213117102074	G ANUSHA	MPCS
19	213117102069	G GEETHA MAHA LAKSHMI	MPCS
20	213117102072	G INDU	MPCS
21	213117102076	G SAI PRAVEEN	MPCS
22	213117102075	G VANAJA	MPSC
23	213117102082	J V PAVAN SAI KUMAR	MPCS
24	213117102090	KOLLEPARA ESWAR SRI VENKATA KUMAR	MPCS
25	213117102085	K JHANSI NAGA RANI	MPCS
26	213117102086	K SHANMUK	MPCS
27	213117102088	K UMESH CHANDRA	MPCS
28	213117102081	JUTTIGA SRIRAM	MPCS
29	213117102104	MD BADIUDDIN	MPCS
30	213117102111	P JAMES	MPCS
31	213117102113	P KRISHNA MOHAN	MPCS
32	213117102115	P MANIKANTA	MPCS
33	213117102132	T BHAVANI	MPCS
34	213117102138	U MANOJ CHAND	MPCS
35	213117102145	Y ANNAPPA	MPCS
36	213117102146	Y TANU SRI	MPCS
37	213117102146	V DURGA SOWJANYA	MPCS

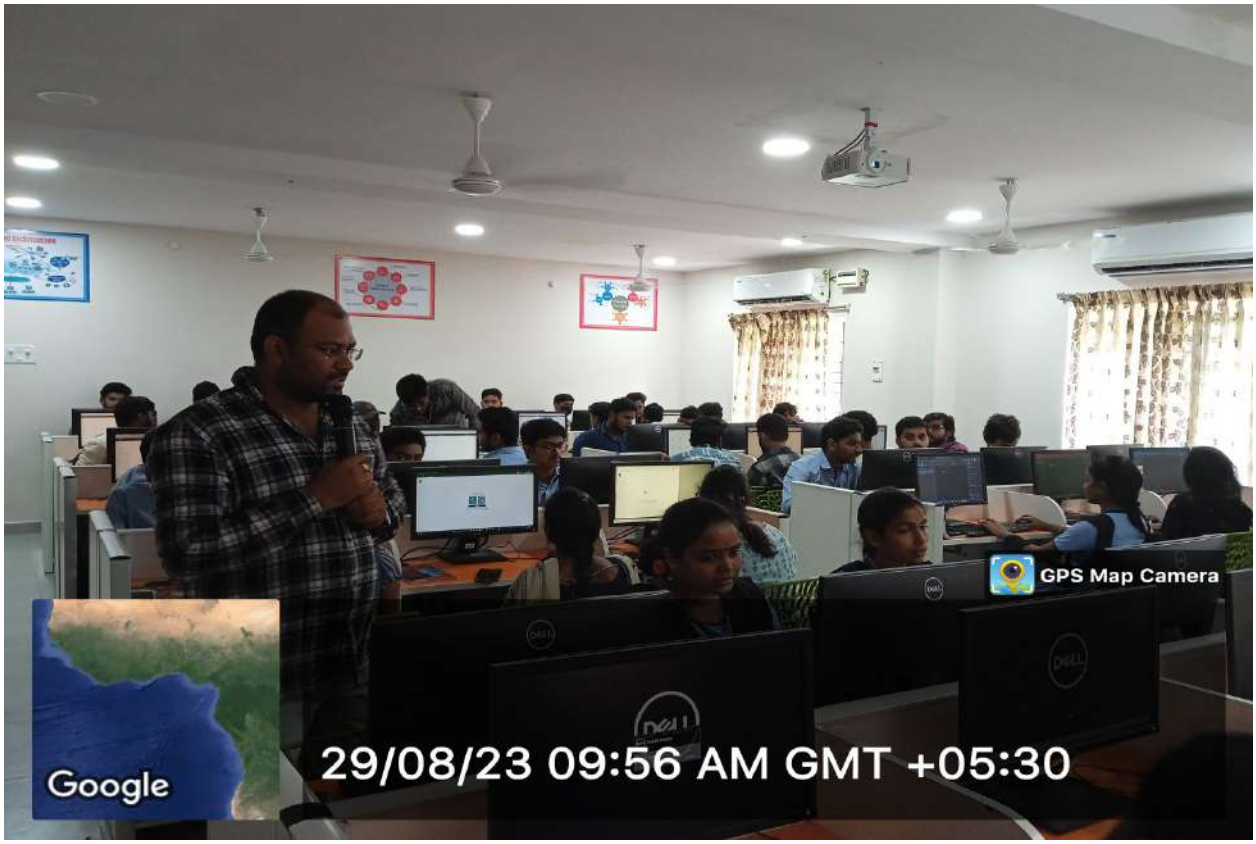
BATCH-2

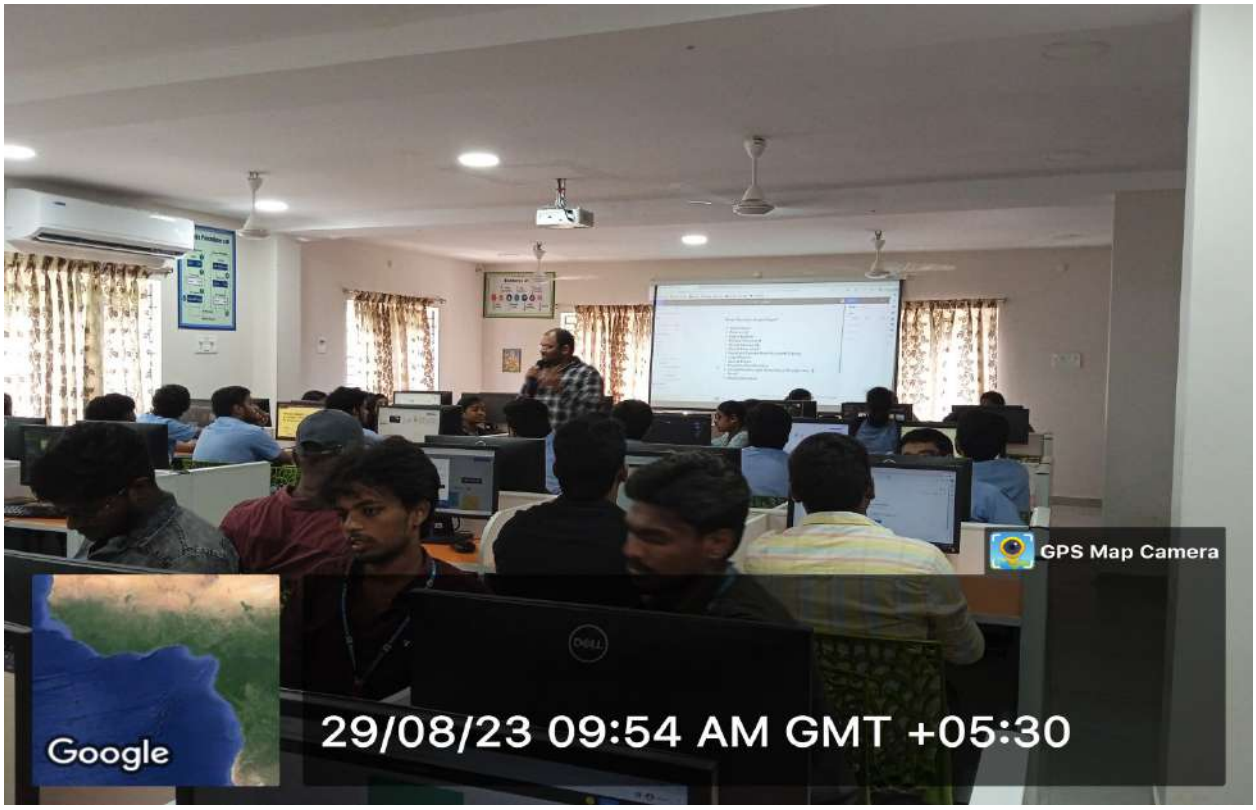
Sno	Redg No	Name	GROUP
1	213118200001	A MADHAVI PHANI LALITHA RAMYASRI	BCOM
2	213118200002	ACHANTA VINAY KUMAR	BCOM
3	213118200003	A.S.V.RAJESH VARMA	BCOM
4	213118200004	B.DURGA BHAVANI	BCOM
5	213118200005	B.JITENDRA NAGA KUMAR	BCOM
6	213118200006	B.GAGANA	BCOM
7	213118200007	B.SANDEEP PRAJWAL	BCOM
8	213118200008	B.DURGA VENKATA SASANK	BCOM
9	213118200009	CH.JAYANTH	BCOM
10	213118200010	CH.BHARATH BALAJI VARMA	BCOM
11	213118200011	CH.SANJAY SIVA KUMAR	BCOM
12	213118200012	CH.VAMSI KIRAN	BCOM
13	213118200013	CH.VAMSI VARMA	BCOM
14	213118200014	CH.NIKHIL	BCOM
15	213118200015	D.NIKITHA	BCOM
16	213118200016	G.PRUTHVI NIKITH VARMA	BCOM
17	213118200017	G.BHARATH KUMAR	BCOM
18	213118200019	G.MANIKANTA	BCOM
19	213118200020	G.SESHADRI	BCOM
20	213118200021	J.HARSHA VARDHAN SAI RAMA KOTESWARA RAJU	BCOM
21	213118200022	J.LALITHA SATYA PRIYA	BCOM
22	213118200023	K.LOHITHA SRI RAGHAVEE	BCOM
23	213118200024	K.NAVEEN	BCOM
24	213118200025	K.VENKATA SAI PRASAD	BCOM
25	213118200026	K.KALYAN VARMA	BCOM
26	213118200027	K.PHANI	BCOM
27	213118200028	K.MURALI	BCOM
28	213118200029	K.MAHA LAKSHMI	BCOM
29	213118200031	K.SRI HARSHA	BCOM
30	213118200032	K.SYAM PAUL	BCOM
31	213118200033	M.PRAVEEN KUMAR	BCOM
32	213118200034	MANISHA DAS	BCOM
33	213118200035	M.DAYANA	BCOM
34	213118200037	N.NITHIN TEJA	BCOM
35	213118200039	P.VIKAS CHAKRAVARTHY	BCOM
36	213118200040	P.HARINI	BCOM
37	213118200041	P.MOHIT VARMA	BCOM
38	213118200042	P.MOSHE	BCOM
39	213118200043	P.TEJA	BCOM
40	213118200044	P.NAVEEN SAI KRISHNA	BCOM
41	213118200045	R.SINDHU	BCOM
42	213118200046	R.L.N.V.S.S.S.TULASI	BCOM
43	213118200047	S.VIJAY KUMAR	BCOM
44	213118200048	S.TEJASWINI	BCOM
45	213118200049	S.BILLY PAUL	BCOM
46	213118200050	S.V.SIVA RAMA RAJU	BCOM
47	213118200051	S.KUSUMA SRI	BCOM
48	213118200052	S.RAMA KRISHNA PRASAD	BCOM
49	213118200053	SK.AARIFA	BCOM
50	213118200054	SK.NAZEER	BCOM
51	213118200055	T.ASISH RAJ	BCOM
52	213118200056	T.N VENKATA PRADEEP	BCOM
53	213118200057	T.KAUSHIK	BCOM

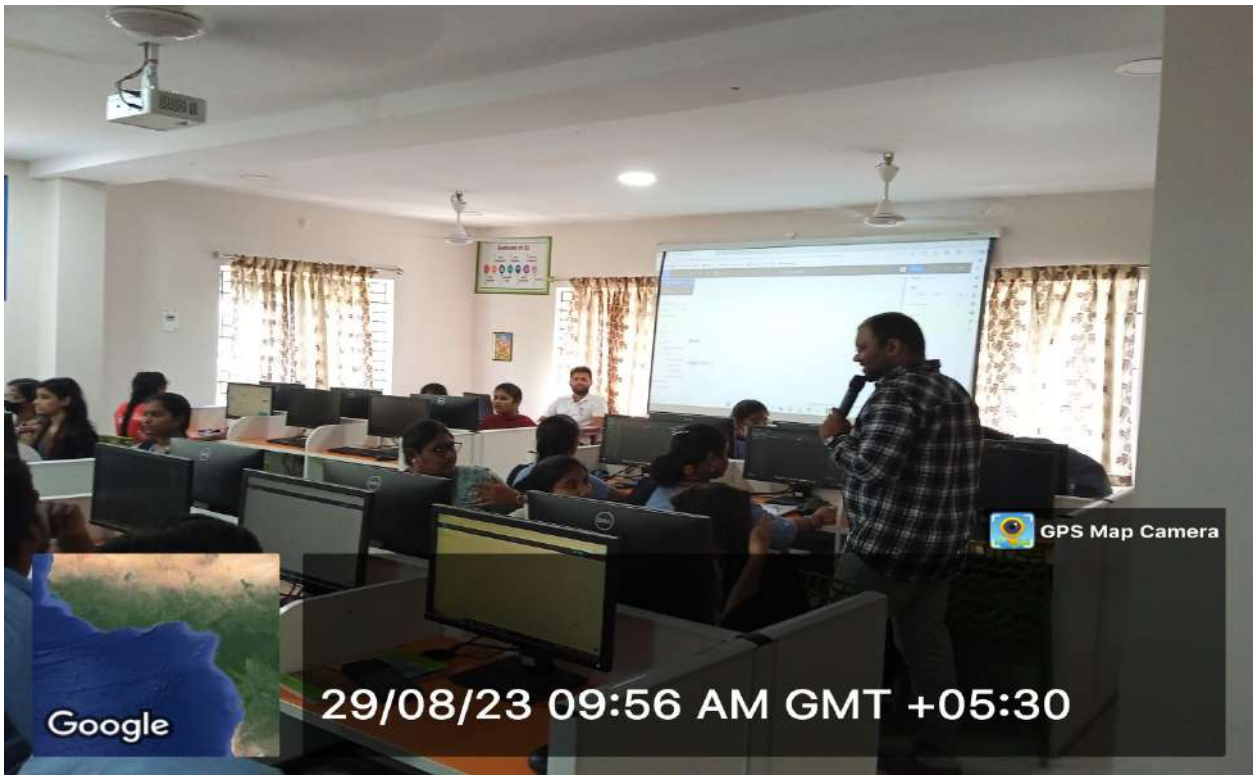
54	213118200058	T.NARENDRA BALAJI	BCOM
55	213118200059	V.INDRANI	BCOM
56	213118200060	V.JASWANTH VARMA	BCOM
57	213118200061	V.VENKATA RAJU	BCOM
58	213118200062	V.KANNA	BCOM
59	213118200063	V.KRANTHI KUMAR	BCOM
60	213118200064	Y.LAVANYA MAHIMA	BCOM
61	213118200065	Y.YESEBU RAJU	BCOM
62	213118200066	Y.CHANTI	BCOM

OPENING NOTE BY PRINCIPAL SIR

LECTURE ON UI & UX






GPS Map Camera
Google
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PurpleLane
VISHNU
UI/UX Design Workshop
DAY 5
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Google
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HG9G+R6H, Kovvada, Andhra Pradesh 534206, India
Lat 16.569634°
Long 81.525515°
01/09/23 02:35 PM GMT +05:30


GPS Map Camera
West Godavari,AP,India
SH 254, Bhimavaram, West Godavari, 534202, AP, India
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Note : Captured by GPS Map Camera


GPS Map Camera
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SH 254, Bhimavaram, West Godavari, 534202, AP, India
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Note : Captured by GPS Map Camera

Projects evaluated by Principal Sir

CLOSING NOTE BY PRINCIPAL SIR AND VICE PRINCIPAL SIR

CERTIFICATE PRESENTATION

B V RAJU COLLEGE
VISHNUPUR :: BHIMAVARAM
VISUAL UI & UX DESIGN

Sno	Redg No	Name	GROUP	1	2	3	4	5	6	7	8	9	10	11
1	213117137312	CH SURYA PRAVEEN	MECS	A	P			✓	✓			P	P	P
2	213117137378	P CHINNA ABRAHAM	MECS	A	P	✓	✓	✓	✓	✓	✓		A	
3	213117137330	G SANTHI PRIYA	MECS	A	P	✓	✓	✓	✓	✓	✓		P	✓
4	213117137385	P MOUNIKA	MECS	A	P	P	P	P	✓	✓	✓		P	
5	213117109219	P SHUSHITHA SRI	MSCS	A	A									
6	213117109245	V SHIVAJI RAJU	MSCS	A	A				✓					
7	213117102048	A HARINADH SAI	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
8	213117102050	A SAI CHARAN	MPCS	✓	P			✓	✓	✓				✓
9	213117102054	B BALA LAKSHMI PRASANA	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
10	213117102051	B BHAVANI	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
11	213117102055	B JHANSI MAHA LAKSHMI	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
12	213117102056	B MANASA	MPCS	✓	A	✓	✓	✓	✓	✓	✓		P	✓
13	213117102059	CH ANAND	MPCS	A	A	✓	✓	✓	✓	✓				
14	213117102063	CH DINESH	MPCS	✓	P	✓	✓	✓	✓	✓				
15	213117102062	CH SWATHI	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
16	213117102067	D MEGHANA	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
17	213117102064	D MOUNIKA	MPCS		A	✓	✓				✓		P	✓
18	213117102074	G ANUSHA	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
19	213117102069	G GEETHA MAHA LAKSHMI	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
20	213117102072	G INDHU	MPCS	A	P	✓	✓	✓	✓	✓	✓		P	✓
21	213117102076	G SAI PRAVEEN	MPCS	A	P			✓	✓	✓			P	✓
22	213117102075	G VANAJA	MPSC	✓	P	✓	✓	✓	✓	✓	✓		P	✓
23	213117102082	J V PAVAN SAI KUMAR	MPCS	✓	P	✓	✓		✓	✓				
24	213117102090	K ESWAR	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
25	213117102085	K JHANSI	MPCS	✓	A	✓	✓	✓	✓	✓	✓		P	✓
26	213117102086	K SHANMUK	MPCS	✓	P	✓	✓	✓	✓	✓			P	
27	213117102088	K UMESH CHANDRA	MPCS	✓	A	✓	✓	✓	✓	✓			P	✓
28	213117102095 ~~K VENKATA CHAITANYA~~ J. Sharad		MPCS	A	P	✓	✓	✓	✓	✓	✓		A	✓
29	213117102104	MD BADIUDDIN	MPCS	✓	A	✓	✓	✓	✓	✓	✓		P	✓
30	213117102111	P JAMES	MPCS	✓	P	✓	✓	✓	✓	✓	✓		A	✓
31	213117102113	P KRISHNA MOHAN	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
32	213117102115	P MANIKANTA	MPCS	A	A			✓	✓	✓	✓		A	
33	213117102132	T BHAVANI	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
34	213117102138	U MANOJ CHAND	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
35	213117102145	Y ANNAPPA	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
36	213117102146	Y TANU SREE	MPCS	✓	P	✓	✓	✓	✓	✓	✓		P	✓
37	213118200055	T.ASISH RAJ- Ashish Raj	BCOM	✓	P	✓	✓	✓	✓	✓	A	✓	P	
38	213118200056	T.N VENKATA PRADEEP	BCOM	✓	A			✓					P	
39	213118200057	T.KOUSHIK	BCOM	✓	A				✓	✓			P	
40	213118200058	T.NARENDRA BALAJI	BCOM	✓	P			✓	✓	✓	✓		P	✓
41	213118200059	V.INDRANI	BCOM	✓	P	✓	✓	✓	✓	✓	✓		P	✓
42	213118200060	V.JASWANTH VARMA	BCOM	✓	P	✓	P						A	
43	213118200061	V.VENKATA RAJU	BCOM	✓	A								A	

B V RAJU COLLEGE
VISHNUPUR :: BHIMAVARAM
VISUAL UI & UX DESIGN
B.COM

1-09-23

Sno	REDG.NO	Name	1	2	3	4	5	6	7	8	9	10	11	12
1	213118200001	A MADHAVI PHANI LALITHA RAMYA SRI												
2	213118200002	ACHANTA VINAY KUMAR												
3	213118200003	A.S.V.RAJESH VARMA												
4	213118200004	B.DURGA BHAVANI												
5	213118200005	B.JITHENDRA NAGA KUMAR												
6	213118200006	B.GAGANA												
7	213118200007	B.SANDEEP PRAJWAL												
8	213118200008	G.DURGA VENKATA SASANK												
9	213118200009	CH.JAYANTH												
10	213118200010	CH.BHARATH BALAJI VARMA												
11	213118200011	CH.SANJAY SIVA KUMAR												
12	213118200012	CH.VAMSI KIRAN												
13	213118200013	CH.VAMSI VARMA												
14	213118200014	CH.NIKHIL												
15	213118200015	D.NIKITHA												
16	213118200016	G.PRUTHVI NIKITH VARMA												
17	213118200017	G.BHARATH KUMAR												
18	213118200019	G.MANIKANTA												
19	213118200020	G.SESHADRI												
20	213118200021	J.H.V.RAMA KOTESWARA RAJU												
21	213118200022	J.LALITHA SATYA PRIYA												
22	213118200023	K.LOHITHA SRI RAGHAVEE												
23	213118200024	K.NAVEEN												
24	213118200025	K.VENKATA SAI PRASAD												
25	213118200026	K.KALYAN VARMA												
26	213118200027	K.PHANI												
27	213118200028	K.MURALI												
28	213118200029	K.MAHA LAKSHMI												
29	213118200031	K.SRI HARSHA												
30	213118200032	K.SHYAM PAUL												
31	213118200033	M.PRAVEEN KUMAR												
32	213118200034	MANISHA DAS												
33	213118200035	M.DAYANA												
34	213118200037	N.NITHIN TEJA												
35	213118200039	P.VIKAS CHAKRAVARTHY												
36	213118200040	P.HARINI												

B V RAJU COLLEGE

VISHNUPUR::BHIMAVARAM

[2023-2024]

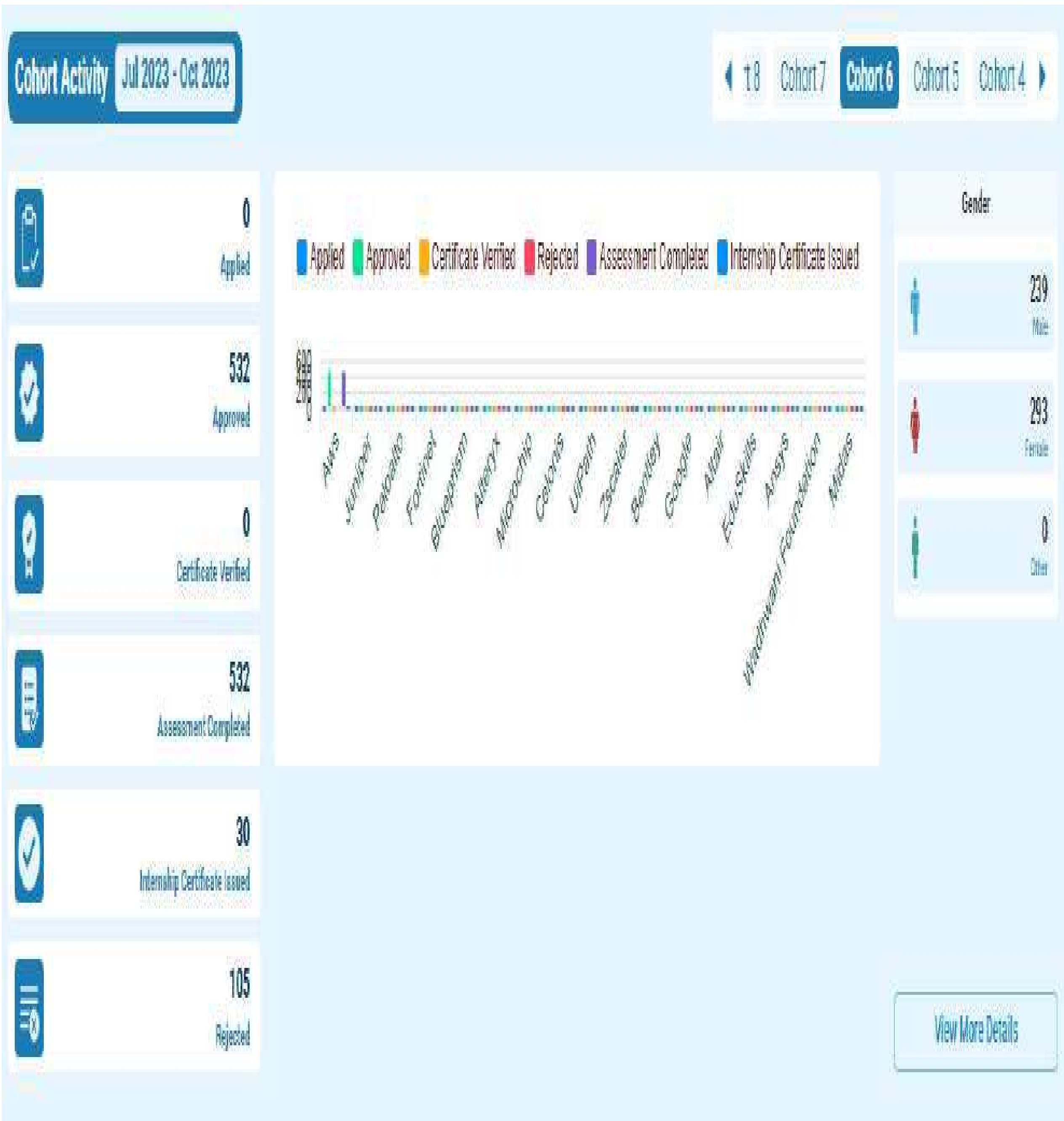
EDUSKILLS ONLINE INTERNSHIPS

Organized by

Computer Science Department

[2023-2024]

COHORT 6


Cohort Activity
Jul 2023 - Oct 2023
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Cohort 7
Cohort 6
Cohort 5
Cohort 4
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Applied
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Approved
0
Certificate Verified
532
Assessment Completed
30
Internship Certificate Issued
105
Rejected
Applied
Approved
Certificate Verified
Rejected
Assessment Completed
Internship Certificate Issued
AWS
Juniper
Palo Alto
Fortinet
Blue Prism
Alteryx
Microchip
Celonis
UiPath
Zscaler
Bentley
Google
Altair
EduSkills
Ansys
Wadhwani Foundation
Mulesoft
Gender
239
Male
293
Female
0
Other
View More Details

B.V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

EDUSKILLS LONG TERM ONLINE INTERNSHIP ENROLLED STUDENTS LIST

COHORT - 6

B.Sc & B.Com 2023-2024

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
1	Sai Gopichand Basina	Aws Cloud Virtual Internship	203117102013	B.Sc.	2023-07-20	Completed
2	Pavan Kalyan Chillakallu	Aws Cloud Virtual Internship	203117102016	B.Sc.	2023-07-20	Completed
3	Hemanth Gokavarapu	Aws Cloud Virtual Internship	203117102021	B.Sc.	2023-07-20	Completed
4	Durga Nagasri Gannabattula	Alteryx Data Analytics Process Automation Virtual Internship	203117102057	Mpcs	2023-07-20	Completed
5	Koppineedi V M Siddardha	Aws Cloud Virtual Internship	203117109197	B.Sc.	2023-07-20	Completed
6	Nimmala Daniyelu	Aws Cloud Virtual Internship	203117109212	B.Sc.	2023-07-20	Completed
7	Veliganti Leela Sai Kumar	Aws Cloud Virtual Internship	203118200061	Bcom	2023-07-20	Completed
8	Vasa Durga Naga Sai	Aws Cloud Virtual Internship	213117137296	B.Sc.	2023-07-20	Completed
9	Bandaru Subhash	Aws Cloud Virtual Internship	213117137306	B.Sc.	2023-07-20	Completed
10	Chilaka Surya Praveen	Aws Cloud Virtual Internship	213117137312	B.Sc.	2023-07-20	Completed
11	Chintapalli Hari Krishna	Aws Cloud Virtual Internship	213117137314	B.Sc.	2023-07-20	Completed
12	Teja Sai	Aws Cloud Virtual Internship	213117137322	B.Sc.	2023-07-20	Completed
13	Donthala Venkata Ramana	Aws Cloud Virtual Internship	213117137323	B.Sc.	2023-07-20	Completed
14	Galidevara Manikanta	Aws Cloud Virtual Internship	213117137328	B.Sc.	2023-07-20	Completed
15	Chandini Gubbala	Aws Cloud Virtual Internship	213117137335	B.Sc.	2023-07-20	Completed
16	Harsha Lakshmi Priya Paramata	Alteryx Data Analytics Process Automation Virtual Internship	213117137342	Mecs	2023-07-20	Completed
17	Kiran Kopparthi	Aws Cloud Virtual Internship	213117137362	B.Sc.	2023-07-20	Completed
18	Pallem Chinna Abraham	Aws Cloud Virtual Internship	213117137378	B.Sc.	2023-07-20	Completed
19	Tammu Sai	Aws Cloud Virtual Internship	213117137395	B.Sc.	2023-07-20	Completed
20	Namratha Kudaka	Aws Cloud Virtual Internship	213117141268	B.Sc.	2023-07-20	Completed
21	Gogulamanda Swanthana	Aws Cloud Virtual Internship	213117141420	B.Sc.	2023-07-20	Completed
22	Thammireddy Vasavi Priya	Aws Cloud Virtual Internship	213117141452	B.Sc.	2023-07-20	Completed
23	Phani Phani Kasireddy	Aws Ai-Ml Virtual Internship	213118300027	Bcom	2023-07-20	Completed
24	Vinjamuri Kranthi Kumar	Aws Cloud Virtual Internship	213118300063	Bcom	2023-07-20	Completed
25	Gayatri Devi Areti	Alteryx Data Analytics Process Automation Virtual Internship	203117109137	Mscs	2023-07-20	Completed
26	Praneetha Buddala	Alteryx Data Analytics Process Automation Virtual Internship	203117109143	B.Sc.	2023-07-20	Completed
27	Lalitha Devi Chekuri	Alteryx Data Analytics Process Automation Virtual Internship	203117109145	Mscs	2023-07-20	Completed
28	Chokkakula Vijaya Sushma	Alteryx Data Analytics Process Automation Virtual Internship	203117109153	B.Sc.	2023-07-20	Completed
29	Kalidindi Navyagayathri	Aws Cloud Virtual Internship	203117109166	Mscs	2023-07-20	Completed
30	Lakshmi Suma Mudunuri	Aws Ai-Ml Virtual Internship	203117109183	MSCS	2023-07-20	Completed
31	Subbaraju Nadimpalli	Aws Ai-Ml Virtual Internship	203117109184	MSCS	2023-07-20	Completed
32	Deepika Palaparthi	Alteryx Data Analytics Process Automation Virtual Internship	203117109190	B.Sc.	2023-07-20	Completed
Sl No	**Full Name**	**Domain**	**Roll No**	**Branch**	**Date At**	**Status**

33	Penmetsa Navya	Alteryx Data Analytics Process Automation Virtual Internship	203117109193	Bsc	2023-07-20	Completed
34	Pinnamaraju Sravani	Aws Data Engineering Virtual Internship	203117109195	B.Sc.	2023-07-20	Completed
35	Polisetti Manikanta Naga Durga Gogula Ganesh	Alteryx Data Analytics Process Automation Virtual Internship	203117109197	Statistics	2023-07-20	Completed
36	Saisuryaashishvarma Rudraraju	Aws Cloud Virtual Internship	203117109206	Bsc Mscs	2023-07-20	Completed
37	Vijaya Raya Kinnera Vanapalli	Alteryx Data Analytics Process Automation Virtual Internship	203117109218	Mscs	2023-07-20	Completed
38	Yamini Veeravalli	Alteryx Data Analytics Process Automation Virtual Internship	203117109222	Statistics	2023-07-20	Completed
39	Chanumuri Bhuvana	Alteryx Data Analytics Process Automation Virtual Internship	203117137290	Bsc Mecs	2023-07-20	Completed
40	Priya Akula	Aws Cloud Virtual Internship	203118200002	Bcom	2023-07-20	Completed
41	Ghantasala Ganesh	Aws Cloud Virtual Internship	203118200014	Bcom	2023-07-20	Completed
42	Padala Sri Varsha	Aws Cloud Virtual Internship	203118200043	B Com	2023-07-20	Completed
43	Nelaparthi Jennifar	Aws Cloud Virtual Internship	203118200063	Bcom	2023-07-20	Completed
44	Kodamanchili Charan Teja	Aws Cloud Virtual Internship	21311137359	B.Sc.	2023-07-20	Completed
45	Uddisi Naga Sai Mahesh Ayyappa	Aws Cloud Virtual Internship	21311137401	B.Sc.	2023-07-20	Completed
46	Agudu Varshitha	Aws Cloud Virtual Internship	213117101001	B.Sc.	2023-07-20	Completed
47	Akula Ram Prasad	Aws Cloud Virtual Internship	213117101002	B.Sc.	2023-07-20	Completed
48	Antharvedi Deekshika	Aws Cloud Virtual Internship	213117101003	B.Sc.	2023-07-20	Completed
49	Bangaru Yedukondala Ganesh	Aws Cloud Virtual Internship	213117101004	B.Sc.	2023-07-20	Completed
50	Baswani Hema Durga Balaji	Aws Cloud Virtual Internship	213117101005	B.Sc.	2023-07-20	Completed
51	Bikkavolu Naga Manikanta	Aws Cloud Virtual Internship	213117101006	B.Sc.	2023-07-20	Completed
52	Bobbara Jaya Sri	Aws Cloud Virtual Internship	213117101007	B.Sc.	2023-07-20	Completed
53	Ganesh Bobbili	Aws Cloud Virtual Internship	213117101008	B.Sc.	2023-07-20	Completed
54	Boina Deevena Kumari	Aws Cloud Virtual Internship	213117101009	B.Sc.	2023-07-20	Completed
55	Dasari Dhana Babu	Aws Cloud Virtual Internship	213117101010	B.Sc.	2023-07-20	Completed
56	Donga Reethu Priya	Aws Cloud Virtual Internship	213117101011	B.Sc.	2023-07-20	Completed
57	Sabbarapu Koteswara Durga Sai Kumar	Aws Cloud Virtual Internship	213117101011	B.Sc.	2023-07-20	Completed
58	Gogada Koti Subramanya Sai	Aws Cloud Virtual Internship	213117101012	B.Sc.	2023-07-20	Completed
59	Golagani Hima Harshini	Aws Cloud Virtual Internship	213117101013	B.Sc.	2023-07-20	Completed
60	Gonaboyina Charishma Devi	Aws Cloud Virtual Internship	213117101014	B.Sc.	2023-07-20	Completed
61	Kamani Harika	Aws Cloud Virtual Internship	213117101016	B.Sc.	2023-07-20	Completed
62	Karri Shankar	Aws Cloud Virtual Internship	213117101017	B.Sc.	2023-07-20	Completed
63	Karri Surya Kala	Aws Cloud Virtual Internship	213117101018	B.Sc.	2023-07-20	Completed
64	Katikireddy Hema Sai Prasad	Aws Cloud Virtual Internship	213117101019	B.Sc.	2023-07-20	Completed
65	Katta Bala Satya Narayana	Aws Cloud Virtual Internship	213117101020	B.Sc.	2023-07-20	Completed
66	Kommuri Manasa Siva Swaroopa	Aws Cloud Virtual Internship	213117101021	B.Sc.	2023-07-20	Completed
67	Kota Naga Venkata Sri Indrani	Aws Cloud Virtual Internship	213117101022	B.Sc.	2023-07-20	Completed
68	Kudipudi Karthik	Aws Cloud Virtual Internship	213117101023	B.Sc.	2023-07-20	Completed
69	Kurakulla Prem Kumar	Aws Cloud Virtual Internship	213117101024	B.Sc.	2023-07-20	Completed
70	Kurella Gowtham Babji	Aws Cloud Virtual Internship	213117101025	B.Sc.	2023-07-20	Completed
71	Mandapati Kalyan	Aws Cloud Virtual Internship	213117101026	B.Sc.	2023-07-20	Completed

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72	Mutyam Sindhura	Aws Cloud Virtual Internship	213117101027	B.Sc.	2023-07-20	Completed
73	Nallamatti Sai Manikanta	Aws Cloud Virtual Internship	213117101028	B.Sc.	2023-07-20	Completed
74	Nallamatti Siva Sai Durga	Aws Cloud Virtual Internship	213117101029	B.Sc.	2023-07-20	Completed
75	Nunna Soma Sekhar	Aws Cloud Virtual Internship	213117101030	B.Sc.	2023-07-20	Completed
76	Paserla Chaitanya	Aws Cloud Virtual Internship	213117101031	B.Sc.	2023-07-20	Completed
77	Pentakoti Leela Siva Rama Prasad	Aws Cloud Virtual Internship	213117101032	B.Sc.	2023-07-20	Completed
78	Pepakayala Uday Pavan	Aws Cloud Virtual Internship	213117101033	B.Sc.	2023-07-20	Completed
79	Pervali Phaneendra Bhargava	Aws Cloud Virtual Internship	213117101035	B.Sc.	2023-07-20	Completed
80	Pippara Charan	Aws Cloud Virtual Internship	213117101036	B.Sc.	2023-07-20	Completed
81	Rudraraju Bhavani Subrahmanyavarma	Aws Cloud Virtual Internship	213117101037	B.Sc.	2023-07-20	Completed
82	Somaraju Rishith Om	Aws Cloud Virtual Internship	213117101039	B.Sc.	2023-07-20	Completed
83	Thota Durga Surya Narayana	Aws Cloud Virtual Internship	213117101040	B.Sc.	2023-07-20	Completed
84	Tirumani Bala Prasanna	Aws Cloud Virtual Internship	213117101041	B.Sc.	2023-07-20	Completed
85	Ura Krupa Mani	Aws Cloud Virtual Internship	213117101042	B.Sc.	2023-07-20	Completed
86	Varadi Sundari Kumari	Aws Cloud Virtual Internship	213117101043	B.Sc.	2023-07-20	Completed
87	Varre Kavya	Aws Cloud Virtual Internship	213117101044	B.Sc.	2023-07-20	Completed
88	Yerramsetti R P N Siva Sai Subba Rao	Aws Cloud Virtual Internship	213117101045	B.Sc.	2023-07-20	Completed
89	Tirumani Shanmukhasai	Aws Cloud Virtual Internship	2131171012133	B.Sc.	2023-07-20	Completed
90	Aavala Vanitha	Aws Cloud Virtual Internship	213117102046	B.Sc.	2023-07-20	Completed
91	Addanki Anil	Aws Cloud Virtual Internship	213117102047	B.Sc.	2023-07-20	Completed
92	Hari Akula	Aws Cloud Virtual Internship	213117102048	B.Sc.	2023-07-20	Completed
93	Balasreya Alla	Aws Cloud Virtual Internship	213117102049	B.Sc.	2023-07-20	Completed
94	Allam Naga Sai Charan	Aws Cloud Virtual Internship	213117102050	B.Sc.	2023-07-20	Completed
95	Bhavani Sai Kumari	Aws Cloud Virtual Internship	213117102051	B.Sc.	2023-07-20	Completed
96	Balla.J.N.D.R. Surya Kiran	Aws Cloud Virtual Internship	213117102052	B.Sc.	2023-07-20	Completed
97	Bhavana Mudunuri	Aws Cloud Virtual Internship	213117102053	B.Sc.	2023-07-20	Completed
98	Boddu Bala Lakshmi Prasanna	Aws Cloud Virtual Internship	213117102054	B.Sc.	2023-07-20	Completed
99	Bokka Jhansi Mahalakshmi	Aws Cloud Virtual Internship	213117102055	B.Sc.	2023-07-20	Completed
100	Bolisetti Sai Bhagya Lakshmi Sri Manasa	Aws Cloud Virtual Internship	213117102056	B.Sc.	2023-07-20	Completed
101	Bommidi Dinesh	Aws Cloud Virtual Internship	213117102057	B.Sc.	2023-07-20	Completed
102	Challa Reshma Sivani	Aws Cloud Virtual Internship	213117102058	B.Sc.	2023-07-20	Completed
103	Chavakula Anand	Aws Cloud Virtual Internship	213117102059	B.Sc.	2023-07-20	Completed
104	Chintala Suneetha	Aws Cloud Virtual Internship	213117102060	B.Sc.	2023-07-20	Completed
105	Chitluri Venkata Tirumalarao	Aws Cloud Virtual Internship	213117102061	B.Sc.	2023-07-20	Completed
106	Chittibomma Swathi	Aws Cloud Virtual Internship	213117102062	B.Sc.	2023-07-20	Completed
107	Dinesh Ch	Aws Cloud Virtual Internship	213117102063	B.Sc.	2023-07-20	Completed
108	Dhanala Mounika	Aws Cloud Virtual Internship	213117102064	B.Sc.	2023-07-20	Completed
109	Dokku Lakshmi Pravallika	Aws Cloud Virtual Internship	213117102065	B.Sc.	2023-07-20	Completed
110	Dolla Satish	Aws Cloud Virtual Internship	213117102066	B.Sc.	2023-07-20	Completed
111	Dyvala Meghana	Aws Cloud Virtual Internship	213117102067	B.Sc.	2023-07-20	Completed
112	Ebba Radhikaphani	Aws Cloud Virtual Internship	213117102068	B.Sc.	2023-07-20	Completed
113	Gadam Geetha Maha Lakshmi	Aws Cloud Virtual Internship	213117102069	B.Sc.	2023-07-20	Completed
114	Gadiraju Mani Sai Lakshmi Parvathi	Aws Cloud Virtual Internship	213117102070	B.Sc.	2023-07-20	Completed
115	Ganta Durga Dhaarani	Aws Cloud Virtual Internship	213117102071	B.Sc.	2023-07-20	Completed
116	Indhu Ganta	Aws Ai-Ml Virtual Internship	213117102072	B.Sc.	2023-07-20	Completed
117	Gottumukkala Tejaswini	Aws Cloud Virtual Internship	213117102073	B.Sc.	2023-07-20	Completed
118	Anusha Gowri	Aws Cloud Virtual Internship	213117102074	B.Sc.	2023-07-20	Completed
119	Gudapati Vanaja	Aws Cloud Virtual Internship	213117102075	B.Sc.	2023-07-20	Completed

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120	Gudla Venkata Sai Praveen	Aws Cloud Virtual Internship	213117102076	B.Sc.	2023-07-20	Completed
121	Gunturi Mani Meghana Devi Sri	Aws Cloud Virtual Internship	213117102077	B.Sc.	2023-07-20	Completed
122	Sravya Jakkamsetti	Aws Cloud Virtual Internship	213117102078	B.Sc.	2023-07-20	Completed
123	Jalasutram Hari	Aws Cloud Virtual Internship	213117102079	B.Sc.	2023-07-20	Completed
124	Javvadi Raghuram	Aws Cloud Virtual Internship	213117102080	B.Sc.	2023-07-20	Completed
125	Juttiga Sriram	Aws Cloud Virtual Internship	213117102081	B.Sc.	2023-07-20	Completed
126	Juttiga Pavan Sai Kumar	Aws Cloud Virtual Internship	213117102082	B.Sc.	2023-07-20	Completed
127	Kala Ganesh	Aws Cloud Virtual Internship	213117102083	B.Sc.	2023-07-20	Completed
128	Kalidindi Lakshmi Saranya	Aws Cloud Virtual Internship	213117102084	B.Sc.	2023-07-20	Completed
129	Jhansi Rani	Aws Ai-Ml Virtual Internship	213117102085	B.Sc.	2023-07-20	Completed
130	Kandula Shanmuk	Aws Cloud Virtual Internship	213117102086	B.Sc.	2023-07-20	Completed
131	Chandra Sai Reddy	Aws Cloud Virtual Internship	213117102087	B.Sc.	2023-07-20	Completed
132	Katari Umesh Chandra	Aws Cloud Virtual Internship	213117102088	B.Sc.	2023-07-20	Completed
133	Kola Pranathi	Aws Cloud Virtual Internship	213117102089	B.Sc.	2023-07-20	Completed
134	Kollepara Eswar Sri Venkata Kumar	Aws Cloud Virtual Internship	213117102090	B.Sc.	2023-07-20	Completed
135	Kolli Yesu Suresh Babu	Aws Cloud Virtual Internship	213117102091	B.Sc.	2023-07-20	Completed
136	Gayathri Kommoju	Aws Cloud Virtual Internship	213117102092	B.Sc.	2023-07-20	Completed
137	Kothuri Gayathri Naga Mani	Aws Cloud Virtual Internship	213117102093	B.Sc.	2023-07-20	Completed
138	Kottapalli Ravi Teja	Aws Cloud Virtual Internship	213117102094	B.Sc.	2023-07-20	Completed
139	Kukkala Venkata Chaitanya	Aws Cloud Virtual Internship	213117102095	B.Sc.	2023-07-20	Completed
140	Kunapareddy Bhavana	Aws Cloud Virtual Internship	213117102096	B.Sc.	2023-07-20	Completed
141	Kunapareddy Bhuvana	Aws Cloud Virtual Internship	213117102097	B.Sc.	2023-07-20	Completed
142	Lankapalli Ravi Kumar	Aws Cloud Virtual Internship	213117102099	B.Sc.	2023-07-20	Completed
143	Magham Navya	Aws Cloud Virtual Internship	213117102100	B.Sc.	2023-07-20	Completed
144	Mallula Aparna	Aws Cloud Virtual Internship	213117102101	B.Sc.	2023-07-20	Completed
145	Mantena Hima Keerthi Lohitha	Aws Cloud Virtual Internship	213117102102	B.Sc.	2023-07-20	Completed
146	Meegada Leela Naga Sowjanya	Aws Cloud Virtual Internship	213117102103	B.Sc.	2023-07-20	Completed
147	Badiuddin Mohammad	Aws Cloud Virtual Internship	213117102104	B.Sc.	2023-07-20	Completed
148	Srivalli Monduri	Aws Cloud Virtual Internship	213117102105	B.Sc.	2023-07-20	Completed
149	Mulagapati Keerthi Sree	Aws Cloud Virtual Internship	213117102106	B.Sc.	2023-07-20	Completed
150	Mylavarapu Bhanu	Aws Cloud Virtual Internship	213117102107	B.Sc.	2023-07-20	Completed
151	Nadiminti Pushpa Naga Lakshmi Manasa	Aws Cloud Virtual Internship	213117102108	B.Sc.	2023-07-20	Completed
152	Divija Paluri	Aws Cloud Virtual Internship	213117102110	B.Sc.	2023-07-20	Completed
153	James Paudel	Aws Cloud Virtual Internship	213117102111	B.Sc.	2023-07-20	Completed
154	Pechetti Jayasri	Aws Cloud Virtual Internship	213117102112	B.Sc.	2023-07-20	Completed
155	Krishna Mohan Peddinti	Aws Cloud Virtual Internship	213117102113	B.Sc.	2023-07-20	Completed
156	Penmatsa Hyndavi	Aws Cloud Virtual Internship	213117102114	B.Sc.	2023-07-20	Completed
157	Penugonda Manikanta	Aws Cloud Virtual Internship	213117102115	B.Sc.	2023-07-20	Completed
158	Rajanala Hema Gowri	Aws Cloud Virtual Internship	213117102116	B.Sc.	2023-07-20	Completed
159	Chaitu Ramba	Aws Cloud Virtual Internship	213117102117	B.Sc.	2023-07-20	Completed
160	Deepika Deepika	Aws Cloud Virtual Internship	213117102118	B.Sc.	2023-07-20	Completed
161	Vasanthi Rudraraju	Aws Cloud Virtual Internship	213117102119	B.Sc.	2023-07-20	Completed
162	Sabbithi Sunny	Aws Cloud Virtual Internship	213117102120	B.Sc.	2023-07-20	Completed
163	Saidani Durgalakshmi	Aws Cloud Virtual Internship	213117102121	B.Sc.	2023-07-20	Completed
164	Jaya Saidu	Aws Cloud Virtual Internship	213117102122	B.Sc.	2023-07-20	Completed
165	Shivani Salipalli	Aws Cloud Virtual Internship	213117102123	B.Sc.	2023-07-20	Completed
166	Sannamandra Prasanna	Aws Cloud Virtual Internship	213117102124	B.Sc.	2023-07-20	Completed
167	Naga Satya Mohana Sattineni	Aws Cloud Virtual Internship	213117102125	B.Sc.	2023-07-20	Completed
168	Seelam Sravanthi	Aws Cloud Virtual Internship	213117102126	B.Sc.	2023-07-20	Completed
169	Seemakurthi Aasritha Lakshmi	Aws Cloud Virtual Internship	213117102127	B.Sc.	2023-07-20	Completed

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170	Shaik Shilar Beebi	Aws Cloud Virtual Internship	213117102128	B.Sc.	2023-07-20	Completed
171	Tadi Mahimajyothi	Aws Cloud Virtual Internship	213117102129	B.Sc.	2023-07-20	Completed
172	Talari Jaya Prakash	Aws Cloud Virtual Internship	213117102130	B.Sc.	2023-07-20	Completed
173	Tammu Jhansi Rani	Aws Cloud Virtual Internship	213117102131	B.Sc.	2023-07-20	Completed
174	Tangella Bhavani	Aws Cloud Virtual Internship	213117102132	B.Sc.	2023-07-20	Completed
175	Thota Geetha Durga Harani	Aws Cloud Virtual Internship	213117102134	B.Sc.	2023-07-20	Completed
176	Tirumalasetti Tinoj Siva Sai Manikanta	Aws Cloud Virtual Internship	213117102135	B.Sc.	2023-07-20	Completed
177	Tirumalasetty Tanuj Kumar	Aws Ai-Ml Virtual Internship	213117102136	B.Sc.	2023-07-20	Completed
178	Uppada Lakshmi	Aws Cloud Virtual Internship	213117102137	B.Sc.	2023-07-20	Completed
179	Manojchand Usala	Aws Cloud Virtual Internship	213117102138	B.Sc.	2023-07-20	Completed
180	Uta Naga Venkata Durga Nikhil	Aws Cloud Virtual Internship	213117102139	Mpcs	2023-07-20	Completed
181	Tarun Vaddi	Aws Cloud Virtual Internship	213117102140	B.Sc.	2023-07-20	Completed
182	Vanam Bharath Nimmalu	Aws Cloud Virtual Internship	213117102141	B.Sc.	2023-07-20	Completed
183	Velpuri Sai Hemanth	Aws Cloud Virtual Internship	213117102142	B.Sc.	2023-07-20	Completed
184	Vendra Durga Sowjanya	Aws Cloud Virtual Internship	213117102143	B.Sc.	2023-07-20	Completed
185	Vendra Pavani	Aws Cloud Virtual Internship	213117102144	B.Sc.	2023-07-20	Completed
186	Annappa Yalamanchili	Aws Cloud Virtual Internship	213117102145	B.Sc.	2023-07-20	Completed
187	Yarlagadda Tanusri	Aws Cloud Virtual Internship	213117102146	B.Sc.	2023-07-20	Completed
188	Yeluri Lakshmi Prasanna	Aws Cloud Virtual Internship	213117102147	B.Sc.	2023-07-20	Completed
189	Komati Mohan Sai Durgesh	Aws Cloud Virtual Internship	213117102195	B.Sc.	2023-07-20	Completed
190	Ainapudi Sravani	Aws Cloud Virtual Internship	213117109148	B.Sc.	2023-07-20	Completed
191	Alamuri H.N.S.Sri.Lakshmi	Aws Cloud Virtual Internship	213117109149	B.Sc.	2023-07-20	Completed
192	Alluri Nyna Harshitha	Aws Cloud Virtual Internship	213117109150	B.Sc.	2023-07-20	Completed
193	Ananthapalli Bindesh Sai	Aws Cloud Virtual Internship	213117109151	B.Sc.	2023-07-20	Completed
194	Annam Mrudula	Aws Cloud Virtual Internship	213117109152	B.Sc.	2023-07-20	Completed
195	Ayitha V Naga Sai Dwaraka Srinivas	Aws Cloud Virtual Internship	213117109153	Mscs	2023-07-20	Completed
196	Bellapu Durga Sushma Sravani	Aws Cloud Virtual Internship	213117109155	B.Sc.	2023-07-20	Completed
197	Bhupathiraju Chaya Sushma Sri	Aws Cloud Virtual Internship	213117109156	B.Sc.	2023-07-20	Completed
198	Kittu Bhupathiraju	Aws Ai-Ml Virtual Internship	213117109157	B.Sc.	2023-07-20	Completed
199	Bonthu Naga Sri Sai Mahesh	Aws Cloud Virtual Internship	213117109158	B.Sc.	2023-07-20	Completed
200	Botta Gowri Pushpa Latha	Aws Cloud Virtual Internship	213117109159	B.Sc.	2023-07-20	Completed
201	Jayavardhan Buridi	Aws Cloud Virtual Internship	213117109160	B.Sc.	2023-07-20	Completed
202	Channamsetti V Bhaskara Satyanarayana	Aws Cloud Virtual Internship	213117109161	B.Sc.	2023-07-20	Completed
203	Chebrolu Kasi Naga Basavayya	Aws Cloud Virtual Internship	213117109162	B.Sc.	2023-07-20	Completed
204	Cheeday Harika Durga	Aws Cloud Virtual Internship	213117109163	B.Sc.	2023-07-20	Completed
205	Meghana Trishi	Aws Cloud Virtual Internship	213117109164	B.Sc.	2023-07-20	Completed
206	Chilaparasetti Rupa Sree	Aws Cloud Virtual Internship	213117109165	Mscs	2023-07-20	Completed
207	Chinta Omkar Prasad	Aws Cloud Virtual Internship	213117109166	B.Sc.	2023-07-20	Completed
208	Chintala G S S Alekhya	Aws Cloud Virtual Internship	213117109167	B.Sc.	2023-07-20	Completed
209	Chintalapati Sai Sruthi	Aws Ai-Ml Virtual Internship	213117109168	B.Sc.	2023-07-20	Completed
210	Chintapalli Rohith Kumar Narasimha	Aws Cloud Virtual Internship	213117109169	B.Sc.	2023-07-20	Completed
211	Chitikela Amrutha Phani Sai Eswari	Aws Cloud Virtual Internship	213117109170	B.Sc.	2023-07-20	Completed
212	Chitturi Sai Sri Poojitha	Aws Cloud Virtual Internship	213117109171	B.Sc.	2023-07-20	Completed
213	Dammuluri Gnana Prasanna	Aws Cloud Virtual Internship	213117109172	B.Sc.	2023-07-20	Completed
214	Ushasree Dandu	Aws Cloud Virtual Internship	213117109173	B.Sc.	2023-07-20	Completed
215	Dudaboina Sai Prasanthi	Aws Cloud Virtual Internship	213117109174	B.Sc.	2023-07-20	Completed
216	Elubandi Bindu Sai Sri Priya	Aws Cloud Virtual Internship	213117109175	B.Sc.	2023-07-20	Completed

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217	Gadi Harsha	Aws Cloud Virtual Internship	213117109176	B.Sc.	2023-07-20	Completed
218	Gadiraju Chandra Swarupa	Aws Cloud Virtual Internship	213117109177	B.Sc.	2023-07-20	Completed
219	Gadiraju Naga Pravallika	Aws Cloud Virtual Internship	213117109178	B.Sc.	2023-07-20	Completed
220	Ganta Revanth Sree	Aws Cloud Virtual Internship	213117109180	B.Sc.	2023-07-20	Completed
221	Godi Omi Sarvagnya	Aws Cloud Virtual Internship	213117109182	B.Sc.	2023-07-20	Completed
222	Gorriparthi Bindu Priya	Aws Cloud Virtual Internship	213117109183	B.Sc.	2023-07-20	Completed
223	Guraja Yaswanth Ganesh	Aws Cloud Virtual Internship	213117109184	B.Sc.	2023-07-20	Completed
224	Dhanush Sai Kadali	Aws Cloud Virtual Internship	213117109185	B.Sc.	2023-07-20	Completed
225	Hemalatha Kalidindi	Aws Cloud Virtual Internship	213117109186	B.Sc.	2023-07-20	Completed
226	Kanumuru Veerendra Kiran Varma	Aws Cloud Virtual Internship	213117109187	B.Sc.	2023-07-20	Completed
227	Karinki Sravani	Aws Cloud Virtual Internship	213117109188	B.Sc.	2023-07-20	Completed
228	Karuturi Varshini	Aws Cloud Virtual Internship	213117109189	B.Sc.	2023-07-20	Completed
229	Jeevan Kumar Katari	Aws Cloud Virtual Internship	213117109190	B.Sc.	2023-07-20	Completed
230	Katta Siva Sandeep	Aws Cloud Virtual Internship	213117109191	B.Sc.	2023-07-20	Completed
231	Divya Jyothi Ketha	Aws Cloud Virtual Internship	213117109192	B.Sc.	2023-07-20	Completed
232	Killampalli Yasaswini	Aws Cloud Virtual Internship	213117109193	B.Sc.	2023-07-20	Completed
233	Kishore Battula	Aws Cloud Virtual Internship	213117109194	B.Sc.	2023-07-20	Completed
234	Koppada Vinay Venkata Aditya	Aws Cloud Virtual Internship	213117109196	Mscs	2023-07-20	Completed
235	Prasanthi Korasikha	Aws Cloud Virtual Internship	213117109199	B.Sc.	2023-07-20	Completed
236	Kukkala Lavanya	Aws Cloud Virtual Internship	213117109200	B.Sc.	2023-07-20	Completed
237	Kuppala Devaki Krishnaveni	Aws Cloud Virtual Internship	213117109201	B.Sc.	2023-07-20	Completed
238	Lokanti Ramya Sri	Aws Cloud Virtual Internship	213117109202	B.Sc.	2023-07-20	Completed
239	Maddala K N Venkata Sri Ranganayakulu	Aws Cloud Virtual Internship	213117109203	B.Sc.	2023-07-20	Completed
240	M V S P Manasa .	Aws Cloud Virtual Internship	213117109204	B.Sc.	2023-07-20	Completed
241	Tulasi Devi Mantena	Aws Cloud Virtual Internship	213117109205	B.Sc.	2023-07-20	Completed
242	Meela Indra Kumar	Aws Cloud Virtual Internship	213117109206	B.Sc.	2023-07-20	Completed
243	Raziya Sultana Mohammad	Aws Cloud Virtual Internship	213117109208	B.Sc.	2023-07-20	Completed
244	Bhagya Lakshmi Moka	Aws Cloud Virtual Internship	213117109209	B.Sc.	2023-07-20	Completed
245	Naga Sai Mudde	Aws Cloud Virtual Internship	213117109210	B.Sc.	2023-07-20	Completed
246	Nakka Venkat	Aws Cloud Virtual Internship	213117109211	B.Sc.	2023-07-20	Completed
247	Padamata Sravani	Aws Cloud Virtual Internship	213117109213	B.Sc.	2023-07-20	Completed
248	Pala Deva Ganesh	Aws Cloud Virtual Internship	213117109214	B.Sc.	2023-07-20	Completed
249	Tulasi Lakshmi Naga Durga Pamideti	Aws Cloud Virtual Internship	213117109215	B.Sc.	2023-07-20	Completed
250	Panuganti Sahithi	Aws Cloud Virtual Internship	213117109216	B.Sc.	2023-07-20	Completed
251	Akshitha Parimi	Aws Cloud Virtual Internship	213117109217	B.Sc.	2023-07-20	Completed
252	Penmethsa Aswitha	Aws Cloud Virtual Internship	213117109218	B.Sc.	2023-07-20	Completed
253	Penmetsa Shushitha Sri	Aws Cloud Virtual Internship	213117109219	B.Sc.	2023-07-20	Completed
254	Pilli Shanmukha Kumar	Aws Cloud Virtual Internship	213117109220	B.Sc.	2023-07-20	Completed
255	Poojitha Kakarla	Aws Cloud Virtual Internship	213117109221	B.Sc.	2023-07-20	Completed
256	Hari Kiran Mutyam Punnani	Aws Cloud Virtual Internship	213117109222	B.Sc.	2023-07-20	Completed
257	Yasaswi Nagadurga Kasivisalakshi Rayaprolu	Aws Cloud Virtual Internship	213117109223	B.Sc.	2023-07-20	Completed
258	Sagi Radha Gayathri	Aws Cloud Virtual Internship	213117109224	B.Sc.	2023-07-20	Completed
259	Bhavya Sagiraju	Aws Cloud Virtual Internship	213117109225	B.Sc.	2023-07-20	Completed
260	Sanku Jyothi	Aws Cloud Virtual Internship	213117109226	B.Sc.	2023-07-20	Completed
261	Shaik Saphiya	Aws Cloud Virtual Internship	213117109227	B.Sc.	2023-07-20	Completed
262	Phani Sirigineedi	Aws Cloud Virtual Internship	213117109229	B.Sc.	2023-07-20	Completed
263	Srinivasula Sai Venkata Sri Vaishnavi	Aws Cloud Virtual Internship	213117109230	B.Sc.	2023-07-20	Completed
264	Sirisha Taragalla	Aws Cloud Virtual Internship	213117109231	B.Sc.	2023-07-20	Completed

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265	Thambabattula Pravallika	Aws Cloud Virtual Internship	213117109232	B.Sc.	2023-07-20	Completed
266	Totharamudi Chaitanya Ajay	Aws Cloud Virtual Internship	213117109234	Mscs	2023-07-20	Completed
267	Sravani Satya Sree Tumu	Aws Cloud Virtual Internship	213117109235	B.Sc.	2023-07-20	Completed
268	Tupuri Tejaswi	Aws Cloud Virtual Internship	213117109236	B.Sc.	2023-07-20	Completed
269	Yathik Vanka	Aws Cloud Virtual Internship	213117109238	B.Sc.	2023-07-20	Completed
270	Sharonkumar Vantabattina	Aws Cloud Virtual Internship	213117109239	B.Sc.	2023-07-20	Completed
271	Vardhanapu Richard Thomas	Aws Cloud Virtual Internship	213117109240	B.Sc.	2023-07-20	Completed
272	Vari Guna Vardhan	Aws Cloud Virtual Internship	213117109241	B.Sc.	2023-07-20	Completed
273	Vedangi Jayanth Satya Sai Srinivas	Aws Cloud Virtual Internship	213117109243	B.Sc.	2023-07-20	Completed
274	Vegesna Hemanjali	Aws Cloud Virtual Internship	213117109244	B.Sc.	2023-07-20	Completed
275	Vegesna Sivaji Raju	Aws Cloud Virtual Internship	213117109245	B.Sc.	2023-07-20	Completed
276	Kusuma Zacharaiah	Aws Cloud Virtual Internship	213117109246	B.Sc.	2023-07-20	Completed
277	Taraka Sannidi	Aws Cloud Virtual Internship	213117109459	B.Sc.	2023-07-20	Completed
278	Kiran Pala	Aws Cloud Virtual Internship	21311712109	B.Sc.	2023-07-20	Completed
279	Venkata Sri Koushitha Ayinampudi	Aws Cloud Virtual Internship	213117121247	B.Sc.	2023-07-20	Completed
280	Sai Manikanta	Aws Cloud Virtual Internship	213117121249	B.Sc.	2023-07-20	Completed
281	Boyina Tarun Shekhar	Aws Cloud Virtual Internship	213117121251	B.Sc.	2023-07-20	Completed
282	Rajesh Varma	Aws Cloud Virtual Internship	213117121252	B.Sc.	2023-07-20	Completed
283	Dasari Ambika	Aws Cloud Virtual Internship	213117121253	B.Sc.	2023-07-20	Completed
284	Davala Renuka	Aws Cloud Virtual Internship	213117121254	B.Sc.	2023-07-20	Completed
285	Gandaboina Jahnavi	Aws Cloud Virtual Internship	213117121255	B.Sc.	2023-07-20	Completed
286	Gedala Krishnama Naidu	Aws Cloud Virtual Internship	213117121256	B.Sc.	2023-07-20	Completed
287	Gollamandala Riya Florence	Aws Cloud Virtual Internship	213117121258	B.Sc.	2023-07-20	Completed
288	Nanditha Gutam	Aws Cloud Virtual Internship	213117121259	B.Sc.	2023-07-20	Completed
289	Keerthi Prasanna Kadali	Aws Cloud Virtual Internship	213117121260	B.Sc.	2023-07-20	Completed
290	Siva Kumar Kancharlapalli	Aws Cloud Virtual Internship	213117121262	B.Sc.	2023-07-20	Completed
291	Kandulapati Amrutha Sri Naga Sai Charani	Aws Cloud Virtual Internship	213117121263	B.Sc.	2023-07-20	Completed
292	Kankatala Veera Lakshmi Vyshnavi	Aws Cloud Virtual Internship	213117121264	B.Sc.	2023-07-20	Completed
293	Kontheti Supriya	Aws Cloud Virtual Internship	213117121265	B.Sc.	2023-07-20	Completed
294	Korukonda Ramyasaisri	Aws Cloud Virtual Internship	213117121266	B.Sc.	2023-07-20	Completed
295	Sushma Koyye	Aws Cloud Virtual Internship	213117121267	B.Sc.	2023-07-20	Completed
296	Lakshmi Priya Madabhushi	Aws Cloud Virtual Internship	213117121269	B.Sc.	2023-07-20	Completed
297	Machha Eswar	Aws Cloud Virtual Internship	213117121270	B.Sc.	2023-07-20	Completed
298	Venky Mangipudi	Aws Cloud Virtual Internship	213117121271	B.Sc.	2023-07-20	Completed
299	Mohammad Uzma Gousia Affrin	Aws Cloud Virtual Internship	213117121272	B.Sc.	2023-07-20	Completed
300	Sri Lakshmi Sneha Mulagapati	Aws Cloud Virtual Internship	213117121273	B.Sc.	2023-07-20	Completed
301	Rama Tulasi Mypala	Aws Cloud Virtual Internship	213117121274	B.Sc.	2023-07-20	Completed
302	Chopperla Naga Alekhya	Aws Cloud Virtual Internship	213117121275	B.Sc.	2023-07-20	Completed
303	Hepsiba Rani	Aws Cloud Virtual Internship	213117121276	B.Sc.	2023-07-20	Completed
304	Divya Namala	Aws Cloud Virtual Internship	213117121277	B.Sc.	2023-07-20	Completed
305	Namana Sarat Sri Suri	Aws Cloud Virtual Internship	213117121278	B.Sc.	2023-07-20	Completed
306	Nunna Manjula	Aws Cloud Virtual Internship	213117121279	B.Sc.	2023-07-20	Completed
307	Pakalapati Asritha	Aws Cloud Virtual Internship	213117121280	B.Sc.	2023-07-20	Completed
308	Anvesh Peethala	Aws Cloud Virtual Internship	213117121281	B.Sc.	2023-07-20	Completed
309	Penmetsa Hema Sai Devi	Aws Cloud Virtual Internship	213117121283	B.Sc.	2023-07-20	Completed
310	Posinasetty Sai Priyanka	Aws Cloud Virtual Internship	213117121286	B.Sc.	2023-07-20	Completed
311	Reddy Harshitha Devi	Aws Cloud Virtual Internship	213117121288	B.Sc.	2023-07-20	Completed
312	Devi Deepthi Samineni	Aws Cloud Virtual Internship	213117121289	B.Sc.	2023-07-20	Completed

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313	Siddamsetti Keerthana	Aws Cloud Virtual Internship	213117121291	B.Sc.	2023-07-20	Completed
314	Penumala Vijaya Bharathi	Aws Cloud Virtual Internship	213117121291	B.Sc.	2023-07-20	Completed
315	Sai Sri Tadicharla	Aws Cloud Virtual Internship	213117121292	B.Sc.	2023-07-20	Completed
316	Tirumani Divya Sree	Aws Cloud Virtual Internship	213117121293	B.Sc.	2023-07-20	Completed
317	Dhana Lakshmi Sri Harsha Vamisetti	Aws Cloud Virtual Internship	213117121294	B.Sc.	2023-07-20	Completed
318	Guna Shekar	Aws Cloud Virtual Internship	213117121295	B.Sc.	2023-07-20	Completed
319	Vasa Gopika	Aws Cloud Virtual Internship	213117121297	B.Sc.	2023-07-20	Completed
320	Vatsavai Dharma Tejas Varma	Aws Cloud Virtual Internship	213117121298	B.Sc.	2023-07-20	Completed
321	Veeramallu Saraswathi Rao	Aws Cloud Virtual Internship	213117121299	B.Sc.	2023-07-20	Completed
322	Jyotsna Vegesna	Aws Cloud Virtual Internship	213117121300	B.Sc.	2023-07-20	Completed
323	Adabala Mrudhula Satya Sri	Aws Cloud Virtual Internship	213117137301	B.Sc.	2023-07-20	Completed
324	Addala Suma Devi	Aws Cloud Virtual Internship	213117137302	B.Sc.	2023-07-20	Completed
325	Akula Jaya Suma Gayathri	Aws Cloud Virtual Internship	213117137303	B.Sc.	2023-07-20	Completed
326	Bandaru Naga Sai Sravani	Aws Cloud Virtual Internship	213117137304	B.Sc.	2023-07-20	Completed
327	Puja Bandaru	Aws Cloud Virtual Internship	213117137305	B.Sc.	2023-07-20	Completed
328	Barnala Salman Raju	Aws Cloud Virtual Internship	213117137307	B.Sc.	2023-07-20	Completed
329	Karunakar Bonam	Aws Cloud Virtual Internship	213117137308	B.Sc.	2023-07-20	Completed
330	Nikitha Chakka	Aws Cloud Virtual Internship	213117137309	B.Sc.	2023-07-20	Completed
331	Cheerala Durga Bhavani	Aws Cloud Virtual Internship	213117137310	B.Sc.	2023-07-20	Completed
332	Prasanthi Chennu	Aws Cloud Virtual Internship	213117137311	B.Sc.	2023-07-20	Completed
333	Chinnaparapu Manoj	Aws Cloud Virtual Internship	213117137313	B.Sc.	2023-07-20	Completed
334	Chodisetty Radha Samhitha	Aws Cloud Virtual Internship	213117137315	B.Sc.	2023-07-20	Completed
335	Daki Jons Melody	Aws Cloud Virtual Internship	213117137316	B.Sc.	2023-07-20	Completed
336	Dandu Sreya	Aws Cloud Virtual Internship	213117137317	B.Sc.	2023-07-20	Completed
337	Darapureddy Tarun Babu	Aws Cloud Virtual Internship	213117137318	B.Sc.	2023-07-20	Completed
338	Dasari Ravi Teja Sri Venkata Shyam	Aws Cloud Virtual Internship	213117137319	B.Sc.	2023-07-20	Completed
339	Vasu Sai	Aws Cloud Virtual Internship	213117137320	B.Sc.	2023-07-20	Completed
340	Devatha Venkata Sravanthi	Aws Cloud Virtual Internship	213117137321	B.Sc.	2023-07-20	Completed
341	Dulam Gopi Sankar	Aws Cloud Virtual Internship	213117137324	B.Sc.	2023-07-20	Completed
342	Dundi Asish Kumar	Aws Cloud Virtual Internship	213117137325	B.Sc.	2023-07-20	Completed
343	Ebba Deva Manikanta	Aws Cloud Virtual Internship	213117137326	B.Sc.	2023-07-20	Completed
344	Edi Vijaya Babu	Aws Cloud Virtual Internship	213117137327	B.Sc.	2023-07-20	Completed
345	Gandham Hema Chandrika	Aws Cloud Virtual Internship	213117137329	B.Sc.	2023-07-20	Completed
346	Gandikota Shanthi Priya	Aws Cloud Virtual Internship	213117137330	B.Sc.	2023-07-20	Completed
347	Ganireddy Jagan Kumar	Aws Cloud Virtual Internship	213117137331	B.Sc.	2023-07-20	Completed
348	Goketi Venkat Rao	Aws Cloud Virtual Internship	213117137333	B.Sc.	2023-07-20	Completed
349	Gonnabattula Amrutha Varshini	Aws Cloud Virtual Internship	213117137334	B.Sc.	2023-07-20	Completed
350	Gudivada Hema	Aws Cloud Virtual Internship	213117137336	B.Sc.	2023-07-20	Completed
351	Gudla Naga Pavan Sai	Aws Cloud Virtual Internship	213117137337	B.Sc.	2023-07-20	Completed
352	Gunti Kumar Babu	Aws Cloud Virtual Internship	213117137338	B.Sc.	2023-07-20	Completed
353	Indukuri Hemitha Phani Sujitha Sri	Aws Cloud Virtual Internship	213117137339	B.Sc.	2023-07-20	Completed
354	Jalasutram Durga Bhavani	Aws Cloud Virtual Internship	213117137340	B.Sc.	2023-07-20	Completed
355	Jalem Gargi Priya	Aws Cloud Virtual Internship	213117137341	B.Sc.	2023-07-20	Completed
356	Jayamangala Priya Darshini	Aws Cloud Virtual Internship	213117137342	B.Sc.	2023-07-20	Completed
357	Jogi Ashok Babu	Aws Cloud Virtual Internship	213117137343	B.Sc.	2023-07-20	Completed
358	Joguripati Krishan Kartheek	Aws Cloud Virtual Internship	213117137344	Mecs	2023-07-20	Completed
359	Mouni Kadali	Aws Cloud Virtual Internship	213117137345	B.Sc.	2023-07-20	Completed
360	Kadali Sai Manoj	Aws Cloud Virtual Internship	213117137346	Mecs	2023-07-20	Completed
361	Kalidindi G V Siva Ramaraju	Aws Cloud Virtual Internship	213117137347	B.Sc.	2023-07-20	Completed

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362	Kalidindi Naga Sai Surendra Varma	Aws Cloud Virtual Internship	213117137348	B.Sc.	2023-07-20	Completed
363	K Mounika	Aws Cloud Virtual Internship	213117137350	B.Sc.	2023-07-20	Completed
364	Karumujji Kalyan Ram	Aws Cloud Virtual Internship	213117137351	B.Sc.	2023-07-20	Completed
365	Katreddy Chaitanya Durga	Aws Cloud Virtual Internship	213117137353	B.Sc.	2023-07-20	Completed
366	Katreddi Yethendra Swamy	Aws Cloud Virtual Internship	213117137354	B.Sc.	2023-07-20	Completed
367	Katta Naga Venkata Satyanarayana	Aws Cloud Virtual Internship	213117137355	B.Sc.	2023-07-20	Completed
368	Katta Trisha	Aws Cloud Virtual Internship	213117137356	B.Sc.	2023-07-20	Completed
369	Katta Venkata Lokesh	Aws Cloud Virtual Internship	213117137357	B.Sc.	2023-07-20	Completed
370	Sukesh Ketha	Aws Cloud Virtual Internship	213117137358	B.Sc.	2023-07-20	Completed
371	Kolli Ramya	Aws Cloud Virtual Internship	213117137360	B.Sc.	2023-07-20	Completed
372	Kommana Shanmukha Sai	Aws Cloud Virtual Internship	213117137361	B.Sc.	2023-07-20	Completed
373	Kosuri Namitha Sri	Aws Cloud Virtual Internship	213117137363	B.Sc.	2023-07-20	Completed
374	Kothapalli Aryesh	Aws Cloud Virtual Internship	213117137364	B.Sc.	2023-07-20	Completed
375	Satyanarayana Koya	Aws Cloud Virtual Internship	213117137365	B.Sc.	2023-07-20	Completed
376	Manthena Naga Sruthi Sri	Aws Cloud Virtual Internship	213117137366	B.Sc.	2023-07-20	Completed
377	Manupati Rajesh	Aws Cloud Virtual Internship	213117137367	B.Sc.	2023-07-20	Completed
378	Moganti Saivyshnavi	Aws Cloud Virtual Internship	213117137368	B.Sc.	2023-07-20	Completed
379	Mohamad Anass	Aws Cloud Virtual Internship	213117137369	B.Sc.	2023-07-20	Completed
380	Jyothika Murapala	Aws Cloud Virtual Internship	213117137370	B.Sc.	2023-07-20	Completed
381	Samson Myla	Aws Cloud Virtual Internship	213117137371	B.Sc.	2023-07-20	Completed
382	Nagaraju Bharath Kumar Varma	Aws Cloud Virtual Internship	213117137372	B.Sc.	2023-07-20	Completed
383	Caleb Nakka	Aws Cloud Virtual Internship	213117137373	B.Sc.	2023-07-20	Completed
384	Nandamuri Praveen Kumar	Zscaler Zero Trust Cloud Security Virtual Internship	213117137374	B.Sc.	2023-07-20	Completed
385	Neelapu Satya Prakash	Aws Cloud Virtual Internship	213117137375	B.Sc.	2023-07-20	Completed
386	Pyla Monali	Aws Cloud Virtual Internship	213117137377	B.Sc.	2023-07-20	Completed
387	Pechetti Bhanu Sai Sree	Aws Cloud Virtual Internship	213117137379	B.Sc.	2023-07-20	Completed
388	Sreeja Pedamallu	Aws Cloud Virtual Internship	213117137380	B.Sc.	2023-07-20	Completed
389	Pedapudi Nandini	Aws Cloud Virtual Internship	213117137381	B.Sc.	2023-07-20	Completed
390	Penmetsa Jeeshitha	Aws Cloud Virtual Internship	213117137382	B.Sc.	2023-07-20	Completed
391	Penmetsa Phani Sai Ramana Varma	Aws Cloud Virtual Internship	213117137383	B.Sc.	2023-07-20	Completed
392	Pichikala Harsha Nandini	Aws Cloud Virtual Internship	213117137384	B.Sc.	2023-07-20	Completed
393	Potnuri Mounika	Aws Cloud Virtual Internship	213117137385	B.Sc.	2023-07-20	Completed
394	Potturi Sri Yoshitha	Aws Cloud Virtual Internship	213117137386	Mecs	2023-07-20	Completed
395	Raagu Devi Navya Sri	Aws Cloud Virtual Internship	213117137387	B.Sc.	2023-07-20	Completed
396	Sai Bhavani	Aws Cloud Virtual Internship	213117137388	B.Sc.	2023-07-20	Completed
397	Rudraraju Madhu Nisha	Aws Cloud Virtual Internship	213117137389	B.Sc.	2023-07-20	Completed
398	Sanaboyina Thanu Sri	Aws Cloud Virtual Internship	213117137390	B.Sc.	2023-07-20	Completed
399	Shaik Shoaib Ali	Aws Cloud Virtual Internship	213117137392	B.Sc.	2023-07-20	Completed
400	Sheik Shabeena	Aws Cloud Virtual Internship	213117137393	B.Sc.	2023-07-20	Completed
401	Tamma Koti Yasaswi	Aws Cloud Virtual Internship	213117137394	B.Sc.	2023-07-20	Completed
402	Thota Bhuvana Naga Lakshmi Durga	Aws Cloud Virtual Internship	213117137396	B.Sc.	2023-07-20	Completed
403	Thota Naga Bhargavi	Aws Cloud Virtual Internship	213117137397	B.Sc.	2023-07-20	Completed
404	Thota Ravi Shankar Naidu	Aws Cloud Virtual Internship	213117137398	B.Sc.	2023-07-20	Completed
405	Thota Swarna Kumari	Aws Cloud Virtual Internship	213117137399	B.Sc.	2023-07-20	Completed
406	Udayana Trilochana	Aws Cloud Virtual Internship	213117137400	B.Sc.	2023-07-20	Completed
407	Uppalapati Sai Lakshmi	Aws Cloud Virtual Internship	213117137402	B.Sc.	2023-07-20	Completed
408	Vegesna Sitaramaraju	Aws Cloud Virtual Internship	213117137403	B.Sc.	2023-07-20	Completed

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409	Velivela Kiran Veera Venkata Satyanarayana	Aws Cloud Virtual Internship	213117137404	B.Sc.	2023-07-20	Completed
410	Vempatapu Madhavi Durga	Aws Cloud Virtual Internship	213117137405	B.Sc.	2023-07-20	Completed
411	Venna Pooja Satya Sree Pravalika	Aws Cloud Virtual Internship	213117137406	B.Sc.	2023-07-20	Completed
412	Volipilli Gowri Mallika	Aws Cloud Virtual Internship	213117137407	B.Sc.	2023-07-20	Completed
413	Adabala Reshma Satya	Aws Cloud Virtual Internship	213117141408	B.Sc.	2023-07-20	Completed
414	Sowmya Satya Durga Tejaswini Addagalla	Aws Cloud Virtual Internship	213117141409	B.Sc.	2023-07-20	Completed
415	Aravapalli Durga Prasad	Aws Cloud Virtual Internship	213117141411	B.Sc.	2023-07-20	Completed
416	Badeti Purna Kanaka Mahalakshmi	Aws Cloud Virtual Internship	213117141412	B.Sc.	2023-07-20	Completed
417	Nandini Birudugadda	Aws Cloud Virtual Internship	213117141414	B.Sc.	2023-07-20	Completed
418	Davaleswarapu Likitha Srivalli	Aws Cloud Virtual Internship	213117141417	B.Sc.	2023-07-20	Completed
419	Dogga Lakshmi Harsha Sri Priyanka	Aws Cloud Virtual Internship	213117141418	B.Sc.	2023-07-20	Completed
420	Gogu Sowjanya	Aws Cloud Virtual Internship	213117141419	B.Sc.	2023-07-20	Completed
421	Gopisetti Devi Saranya	Aws Cloud Virtual Internship	213117141422	B.Sc.	2023-07-20	Completed
422	Keerthi Gottumukkala	Aws Cloud Virtual Internship	213117141423	B.Sc.	2023-07-20	Completed
423	Illa Bavya Sri Satya	Aws Cloud Virtual Internship	213117141424	B.Sc.	2023-07-20	Completed
424	Vaishnavi Varma	Aws Cloud Virtual Internship	213117141425	B.Sc.	2023-07-20	Completed
425	Javvadi Anitha Devi	Aws Cloud Virtual Internship	213117141426	B.Sc.	2023-07-20	Completed
426	Kadiyam Veera Venkata Manideep	Aws Cloud Virtual Internship	213117141427	B.Sc.	2023-07-20	Completed
427	Durga Saranya Kannaji	Aws Cloud Virtual Internship	213117141428	B.Sc.	2023-07-20	Completed
428	Karanam Harsha Deepil	Aws Cloud Virtual Internship	213117141429	B.Sc.	2023-07-20	Completed
429	Ajith Babu Katta	Aws Cloud Virtual Internship	213117141430	B.Sc.	2023-07-20	Completed
430	Kesana Gayathri	Aws Cloud Virtual Internship	213117141431	B.Sc.	2023-07-20	Completed
431	Beulah Kothapalli	Aws Cloud Virtual Internship	213117141432	B.Sc.	2023-07-20	Completed
432	Lingampalli Amitha	Aws Cloud Virtual Internship	213117141434	B.Sc.	2023-07-20	Completed
433	Niharika Mamidi	Aws Cloud Virtual Internship	213117141435	B.Sc.	2023-07-20	Completed
434	Harish Mekala	Aws Cloud Virtual Internship	213117141436	B.Sc.	2023-07-20	Completed
435	Miriyala Praveen	Aws Cloud Virtual Internship	213117141437	B.Sc.	2023-07-20	Completed
436	Muddala Yashodharani	Aws Cloud Virtual Internship	213117141438	B.Sc.	2023-07-20	Completed
437	Mudunuri Jahnavi	Aws Cloud Virtual Internship	213117141439	B.Sc.	2023-07-20	Completed
438	Nagaraju Likhitha	Aws Cloud Virtual Internship	213117141440	B.Sc.	2023-07-20	Completed
439	Netala Rajesh	Aws Cloud Virtual Internship	213117141441	B.Sc.	2023-07-20	Completed
440	Bhanu Sailaja Oggu	Aws Cloud Virtual Internship	213117141442	B.Sc.	2023-07-20	Completed
441	Deepika Ogireddy	Aws Cloud Virtual Internship	213117141443	B.Sc.	2023-07-20	Completed
442	Mounika Penmetsa	Aws Cloud Virtual Internship	213117141445	B.Sc.	2023-07-20	Completed
443	Penugonda Mounika	Aws Cloud Virtual Internship	213117141446	B.Sc.	2023-07-20	Completed
444	Peteti Uma Maheswari	Aws Cloud Virtual Internship	213117141447	B.Sc.	2023-07-20	Completed
445	Sravani Potnuri	Aws Cloud Virtual Internship	213117141448	B.Sc.	2023-07-20	Completed
446	Ranga Chinmayi	Aws Cloud Virtual Internship	213117141450	B.Sc.	2023-07-20	Completed
447	Sanku Syamala Sai Prasanna	Aws Cloud Virtual Internship	213117141451	B.Sc.	2023-07-20	Completed
448	Akshara Thota	Aws Cloud Virtual Internship	213117141453	B.Sc.	2023-07-20	Completed
449	Thota Kanaka Durga	Aws Cloud Virtual Internship	213117141454	B.Sc.	2023-07-20	Completed
450	Uppala Sai Lohitha	Aws Cloud Virtual Internship	213117141455	B.Sc.	2023-07-20	Completed
451	Vepada Deepika Deepika	Aws Cloud Virtual Internship	213117141456	B.Sc.	2023-07-20	Completed
452	Yarakaraju Himaja	Aws Cloud Virtual Internship	213117141457	B.Sc.	2023-07-20	Completed
453	Yatham.Jhansi Prasanna	Aws Cloud Virtual Internship	213117141458	B.Sc.	2023-07-20	Completed
454	Achanta Madhavi Phani Lalitha Ramyasri	Aws Cloud Virtual Internship	213118200001	Bcom	2023-07-20	Completed

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455	Bale Bhavani	Aws Cloud Virtual Internship	213118200004	Bcom	2023-07-20	Completed
456	Barre Jitendra Naga Kumar	Aws Cloud Virtual Internship	213118200005	Bcom	2023-07-20	Completed
457	Bobbala Gagana	Aws Cloud Virtual Internship	213118200006	Bcom	2023-07-20	Completed
458	Sandeep Prajwal	Aws Cloud Virtual Internship	213118200007	Bcom	2023-07-20	Completed
459	Boddu Durga Venkana Sasank	Aws Cloud Virtual Internship	213118200008	Bcom	2023-07-20	Completed
460	Jayanth Cheepu	Aws Cloud Virtual Internship	213118200009	Bcom	2023-07-20	Completed
461	Bharath Balaji Varma Chekuri	Aws Cloud Virtual Internship	213118200010	Bcom	2023-07-20	Completed
462	Chellaboina Sanjay Siva Kumar	Aws Cloud Virtual Internship	213118200011	Bcom	2023-07-20	Completed
463	Chennamsetti Vamsi Kiran	Aws Cloud Virtual Internship	213118200012	Bcom	2023-07-20	Completed
464	Chintalapati Vamsi Varma	Aws Cloud Virtual Internship	213118200013	Bcom	2023-07-20	Completed
465	Nikhil Chippada	Aws Cloud Virtual Internship	213118200014	Bcom	2023-07-20	Completed
466	Deshpet Nikitha	Aws Ai-Ml Virtual Internship	213118200015	Bcom	2023-07-20	Completed
467	Gadiraju Prudhvi Nikith Varma	Aws Cloud Virtual Internship	213118200016	B Com	2023-07-20	Completed
468	Ganta Bharath Kumar	Aws Cloud Virtual Internship	213118200017	Bcom	2023-07-20	Completed
469	Gorle Manikanta	Aws Cloud Virtual Internship	213118200019	Bcom	2023-07-20	Completed
470	Jampana Harsha Vardhan Sai Rama Koteswar Raju	Aws Cloud Virtual Internship	213118200021	Bcom	2023-07-20	Completed
471	Javvadi Lalitha	Aws Cloud Virtual Internship	213118200022	Bcom	2023-07-20	Completed
472	Kakulapati Naveen	Aws Cloud Virtual Internship	213118200024	Bcom	2023-07-20	Completed
473	Kandulapati Venkata Sai Prasad	Aws Cloud Virtual Internship	213118200025	Bcom	2023-07-20	Completed
474	Kalyan Varma	Aws Cloud Virtual Internship	213118200026	Bcom	2023-07-20	Completed
475	Kondaveti Murali	Aws Cloud Virtual Internship	213118200028	Bcom	2023-07-20	Completed
476	Kondeti Mahalakshmi	Aws Cloud Virtual Internship	213118200029	Bcom	2023-07-20	Completed
477	Kopparthi Sri Harsha	Aws Cloud Virtual Internship	213118200031	Bcom	2023-07-20	Completed
478	Korada Syam Pal	Aws Cloud Virtual Internship	213118200032	Bcom	2023-07-20	Completed
479	Madireddy Praveen Kumar	Aws Cloud Virtual Internship	213118200033	Bcom	2023-07-20	Completed
480	Manisha Das	Aws Cloud Virtual Internship	213118200034	Bcom	2023-07-20	Completed
481	Medidi Dayana	Aws Ai-Ml Virtual Internship	213118200035	Bcom	2023-07-20	Completed
482	Nadimpalli Nithin Teja	Aws Cloud Virtual Internship	213118200037	Bcom	2023-07-20	Completed
483	Perikala Vikas Chakravarthy	Aws Cloud Virtual Internship	213118200039	Bcom	2023-07-20	Completed
484	Harini Periketi	Google Android Developer Virtual Internship	213118200040	Bcom	2023-07-20	Completed
485	Pinnamraju Mohit Varma	Aws Cloud Virtual Internship	213118200041	Bcom	2023-07-20	Completed
486	Moshe Poleti	Aws Cloud Virtual Internship	213118200042	Bcom	2023-07-20	Completed
487	Teja Poreddi	Aws Cloud Virtual Internship	213118200043	Bcom	2023-07-20	Completed
488	Prathipati Naveen Sai Krishna	Aws Cloud Virtual Internship	213118200044	Bcom	2023-07-20	Completed
489	Rayinuthula Sindhu	Aws Ai-Ml Virtual Internship	213118200045	Bcom	2023-07-20	Completed
490	Revuri L N V S S S Tulasi	Aws Cloud Virtual Internship	213118200046	Bcom	2023-07-20	Completed
491	Vijay Kumar Sabbarapu	Aws Cloud Virtual Internship	213118200047	B.Voc	2023-07-20	Completed
492	Saipu Tejaswini	Aws Cloud Virtual Internship	213118200048	Bcom	2023-07-20	Completed
493	Siva Saripalli	Aws Cloud Virtual Internship	213118200050	Bcom	2023-07-20	Completed
494	Sayana Kusuma Sri	Aws Cloud Virtual Internship	213118200051	Bcom	2023-07-20	Completed
495	Seesala Rama Krishna Prasad	Aws Cloud Virtual Internship	213118200052	Bcom	2023-07-20	Completed
496	Shaik Aarifa	Aws Ai-Ml Virtual Internship	213118200053	Bcom	2023-07-20	Completed
497	Nazeer Sheik	Aws Cloud Virtual Internship	213118200054	Bcom	2023-07-20	Completed
498	Talluri Ashish Raj	Aws Cloud Virtual Internship	213118200055	Bcom	2023-07-20	Completed
499	Kaushik Telagamsetti	Aws Cloud Virtual Internship	213118200057	Bcom	2023-07-20	Completed
500	Tummapudi Narendra Balaji	Aws Cloud Virtual Internship	213118200058	Bcom	2023-07-20	Completed
501	Indrani Vatala	Aws Cloud Virtual Internship	213118200059	Bcom	2023-07-20	Completed
502	Jaswanth Varma Vegesna	Aws Cloud Virtual Internship	213118200060	Bcom	2023-07-20	Completed
503	Venkat Vegesna	Aws Ai-Ml Virtual Internship	213118200061	Bcom	2023-07-20	Completed
504	Vempatapu Kannayya	Aws Cloud Virtual Internship	213118200062	Bcom	2023-07-20	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
505	Yeseburaju Yandamuri	Aws Cloud Virtual Internship	213118200065	Bcom	2023-07-20	Completed
506	Chanti Yenugupalli	Aws Cloud Virtual Internship	213118200066	Bcom	2023-07-20	Completed
507	Billy Paul Sarabu	Palo Alto Cybersecurity Virtual Internship	21311820049	Bcom	2023-07-20	Completed

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[2023-2024]

EDUSKILLS ONLINE INTERNSHIPS

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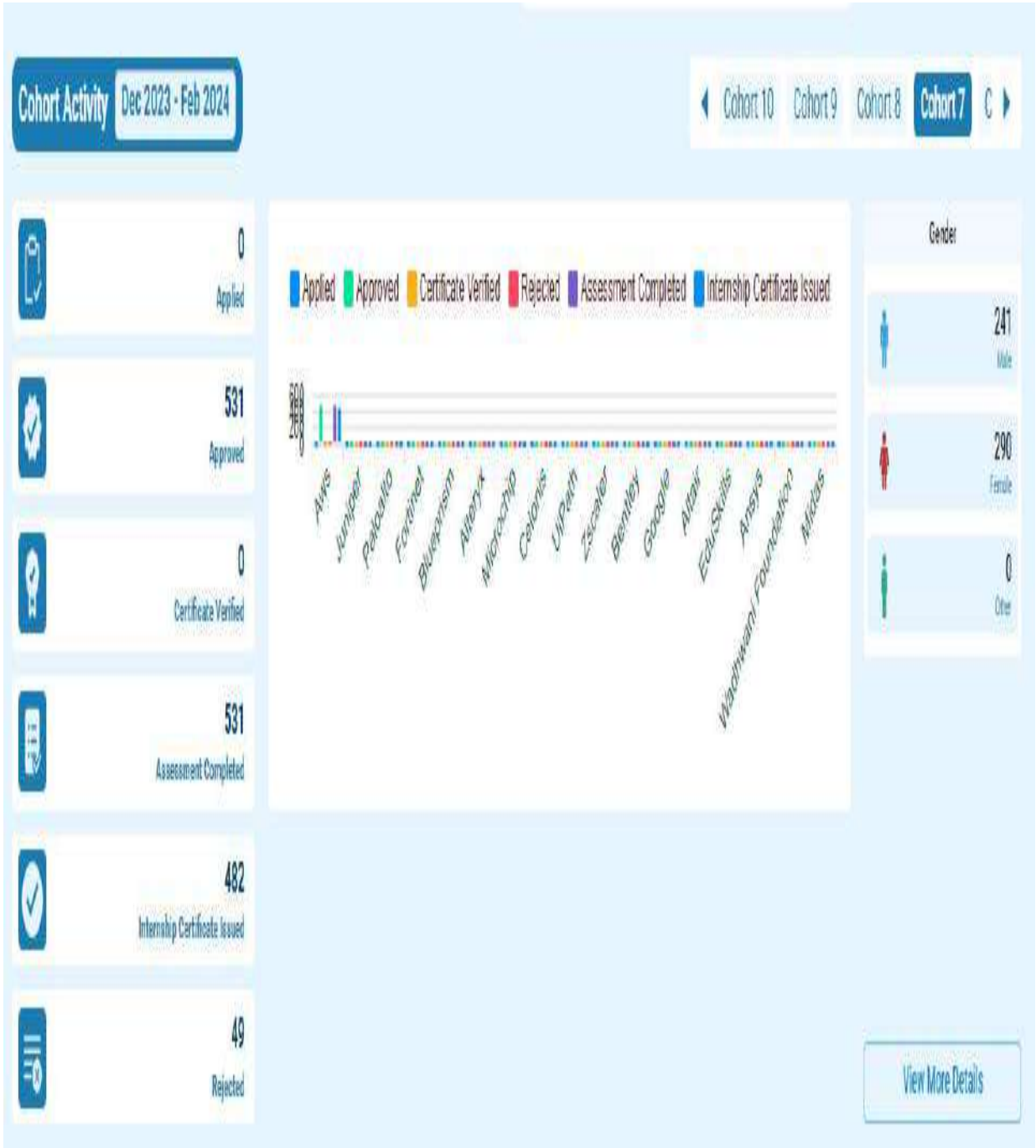
Computer Science Department

[2023-2024]

COHORT 7


Cohort Activity
Dec 2023 - Feb 2024
Cohort 10
Cohort 9
Cohort 8
Cohort 7
0
Applied
531
Approved
0
Certificate Verified
531
Assessment Completed
482
Internship Certificate Issued
49
Rejected
Applied
Approved
Certificate Verified
Rejected
Assessment Completed
Internship Certificate Issued
Gender
241
Male
290
Female
0
Other
View More Details

B.V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

EDUSKILLS LONG TERM ONLINE INTERNSHIP ENROLLED STUDENTS LIST

COHORT - 7

B.Sc & B.Com 2023-2024

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
1	Uddisi Naga Sai Mahesh Ayyappa	Aws Ai-Ml Virtual Internship	213117137401	B.Sc.	2024-03-15	Completed
2	Thammireddy Vasavi Priya	Aws Ai-Ml Virtual Internship	213117141452	B.Sc.	2024-03-14	Completed
3	Namratha Kudaka	Aws Data Engineering Virtual Internship	213117141268	B.Sc.	2024-03-14	Completed
4	Agudu Varshitha	Aws Ai-Ml Virtual Internship	213117101001	B.Sc.	2024-03-14	Completed
5	Akula Ram Prasad	Aws Ai-Ml Virtual Internship	213117101002	B.Sc.	2024-03-14	Completed
6	Antharvedi Deekshika	Aws Ai-Ml Virtual Internship	213117101003	B.Sc.	2024-03-14	Completed
7	Bangaru Yedukondala Ganesh	Aws Ai-Ml Virtual Internship	213117101004	B.Sc.	2024-03-14	Completed
8	Baswani Hema Durga Balaji	Aws Ai-Ml Virtual Internship	213117101005	B.Sc.	2024-03-15	Completed
9	Bikkavolu Naga Manikanta	Aws Ai-Ml Virtual Internship	213117101006	B.Sc.	2024-03-14	Completed
10	Bobbara Jaya Sri	Aws Ai-Ml Virtual Internship	213117101007	B.Sc.	2024-03-15	Completed
11	Ganesh Bobbili	Aws Ai-Ml Virtual Internship	213117101008	B.Sc.	2024-03-14	Completed
12	Boina Deevena Kumari	Aws Ai-Ml Virtual Internship	213117101009	B.Sc.	2024-03-14	Completed
13	Dasari Dhana Babu	Aws Ai-Ml Virtual Internship	213117101010	B.Sc.	2024-03-14	Completed
14	Donga Reethu Priya	Aws Ai-Ml Virtual Internship	213117101011	B.Sc.	2024-03-14	Completed
15	Sabbarapu Koteswara Durga Sai Kumar	Aws Ai-Ml Virtual Internship	213117101011	B.Sc.	2024-03-14	Completed
16	Gogada Koti Subramanya Sai	Aws Ai-Ml Virtual Internship	213117101012	B.Sc.	2024-03-14	Completed
17	Golagani Hima Harshini	Aws Ai-Ml Virtual Internship	213117101013	B.Sc.	2024-03-16	Completed
18	Gonaboyina Charishma Devi	Aws Ai-Ml Virtual Internship	213117101014	B.Sc.	2024-03-14	Completed
19	Kamani Harika	Aws Ai-Ml Virtual Internship	213117101016	B.Sc.	2024-03-14	Completed
20	Karri Shankar	Aws Ai-Ml Virtual Internship	213117101017	B.Sc.	2024-03-14	Completed
21	Karri Surya Kala	Aws Ai-Ml Virtual Internship	213117101018	B.Sc.	2024-03-14	Completed
22	Katikireddy Hema Sai Prasad	Aws Ai-Ml Virtual Internship	213117101019	B.Sc.	2024-03-14	Completed
23	Katta Bala Satya Narayana	Aws Ai-Ml Virtual Internship	213117101020	B.Sc.	2024-03-15	Completed
24	Kommuri Manasa Siva Swaroopa	Aws Ai-Ml Virtual Internship	213117101021	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
25	Kota Naga Venkata Sri Indrani	Aws Ai-Ml Virtual Internship	213117101022	B.Sc.	2024-03-14	Completed
26	Kudipudi Karthik	Aws Ai-Ml Virtual Internship	213117101023	B.Sc.	2024-03-16	Completed
27	Kurakulla Prem Kumar	Aws Ai-Ml Virtual Internship	213117101024	B.Sc.	2024-03-16	Completed
28	Kurella Gowtham Babji	Aws Ai-Ml Virtual Internship	213117101025	B.Sc.	2024-03-15	Completed
29	Mandapati Kalyan	Aws Ai-Ml Virtual Internship	213117101026	B.Sc.	2024-03-15	Completed
30	Mutyam Sindhura	Aws Ai-Ml Virtual Internship	213117101027	B.Sc.	2024-03-14	Completed
31	Nallamatti Sai Manikanta	Aws Ai-Ml Virtual Internship	213117101028	B.Sc.	2024-03-14	Completed
32	Nallamatti Siva Sai Durga	Aws Ai-Ml Virtual Internship	213117101029	B.Sc.	2024-03-14	Completed
33	Nunna Soma Sekhar	Aws Ai-Ml Virtual Internship	213117101030	B.Sc.	2024-03-14	Completed
34	Paserla Chaitanya	Aws Ai-Ml Virtual Internship	213117101031	B.Sc.	2024-03-14	Completed
35	Pentakoti Leela Siva Rama Prasad	Aws Ai-Ml Virtual Internship	213117101032	B.Sc.	2024-03-14	Completed
36	Pepakayala Uday Pavan	Aws Ai-Ml Virtual Internship	213117101033	B.Sc.	2024-03-15	Completed
37	Pervali Phaneendra Bhargava	Aws Ai-Ml Virtual Internship	213117101035	B.Sc.	2024-03-14	Completed
38	Pippara Charan	Aws Ai-Ml Virtual Internship	213117101036	B.Sc.	2024-03-15	Completed
39	Rudraraju Bhavani Subrahmanyavarma	Google Android Developer Virtual Internship	213117101037	B.Sc.	2024-03-09	Completed
40	Rudraraju Bhavani Subrahmanyavarma	Aws Ai-Ml Virtual Internship	213117101037	B.Sc.	2024-03-15	Completed
41	Somaraju Rishith Om	Aws Ai-Ml Virtual Internship	213117101039	B.Sc.	2024-03-16	Completed
42	Thota Durga Surya Narayana	Aws Ai-Ml Virtual Internship	213117101040	B.Sc.	2024-03-14	Completed
43	Tirumani Bala Prasanna	Aws Ai-Ml Virtual Internship	213117101041	B.Sc.	2024-03-15	Completed
44	Ura Krupa Mani	Aws Ai-Ml Virtual Internship	213117101042	B.Sc.	2024-03-14	Completed
45	Varadi Sundari Kumari	Aws Ai-Ml Virtual Internship	213117101043	B.Sc.	2024-03-14	Completed
46	Varre Kavya	Aws Ai-Ml Virtual Internship	213117101044	B.Sc.	2024-03-14	Completed
47	Yerramsetti R P N Siva Sai Subba Rao	Aws Ai-Ml Virtual Internship	213117101045	B.Sc.	2024-03-14	Completed
48	Tirumani Shanmukhasai	Aws Data Engineering Virtual Internship	2131171012133	B.Sc.	2024-03-15	Completed
49	Aavala Vanitha	Aws Ai-Ml Virtual Internship	213117102046	B.Sc.	2024-03-14	Completed
50	Addanki Anil	Aws Ai-Ml Virtual Internship	213117102047	B.Sc.	2024-03-16	Completed
51	Akula Harnadh Sai	Aws Ai-Ml Virtual Internship	213117102048	It	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
52	Alla Bala Sreya	Aws Ai-Ml Virtual Internship	213117102049	B.Sc.	2024-03-15	Completed
53	Allam Naga Sai Charan	Aws Ai-Ml Virtual Internship	213117102050	B.Sc.	2024-03-15	Completed
54	Bhavani Sai Kumari	Aws Ai-Ml Virtual Internship	213117102051	B.Sc.	2024-03-15	Completed
55	Balla.J.N.D.R. Surya Kiran	Aws Ai-Ml Virtual Internship	213117102052	B.Sc.	2024-03-14	Completed
56	Bhavana Mudunuri	Palo Alto Cybersecurity Virtual Internship	213117102053	B.Sc.	2024-03-10	Completed
57	Bhavana Mudunuri	Aws Ai-Ml Virtual Internship	213117102053	B.Sc.	2024-03-15	Completed
58	Boddu Bala Lakshmi Prasanna	Aws Ai-Ml Virtual Internship	213117102054	B.Sc.	2024-03-14	Completed
59	Bokka Jhansi Mahalakshmi	Aws Ai-Ml Virtual Internship	213117102055	B.Sc.	2024-03-14	Completed
60	Bolisetti Sai Bhagya Lakshmi Sri Manasa	Aws Ai-Ml Virtual Internship	213117102056	B.Sc.	2024-03-15	Completed
61	Bommidi Dinesh	Aws Ai-Ml Virtual Internship	213117102057	B.Sc.	2024-03-14	Completed
62	Challa Reshma Sivani	Aws Ai-Ml Virtual Internship	213117102058	B.Sc.	2024-03-14	Completed
63	Chavakula Anand	Aws Ai-Ml Virtual Internship	213117102059	B.Sc.	2024-03-16	Completed
64	Chitluri Venkata Tirumalarao	Aws Ai-Ml Virtual Internship	213117102061	B.Sc.	2024-03-14	Completed
65	Chittibomma Swathi	Aws Ai-Ml Virtual Internship	213117102062	B.Sc.	2024-03-14	Completed
66	Dinesh Ch	Aws Ai-Ml Virtual Internship	213117102063	B.Sc.	2024-03-14	Completed
67	Dhanala Mounika	Aws Data Engineering Virtual Internship	213117102064	B.Sc.	2024-03-15	Completed
68	Lakshmi Pravallika Dokku	Aws Ai-Ml Virtual Internship	213117102065	B.Sc.	2024-03-15	Completed
69	Dolla Satish	Aws Ai-Ml Virtual Internship	213117102066	B.Sc.	2024-03-14	Completed
70	Dyvala Meghana	Aws Ai-Ml Virtual Internship	213117102067	B.Sc.	2024-03-15	Completed
71	Ebba Radhikaphani	Aws Ai-Ml Virtual Internship	213117102068	B.Sc.	2024-03-14	Completed
72	Gadam Geetha Mahalakshmi	Aws Ai-Ml Virtual Internship	213117102069	B.Sc.	2024-03-15	Completed
73	Gadiraju Mani Sai Lakshmi Parvathi	Aws Ai-Ml Virtual Internship	213117102070	B.Sc.	2024-03-14	Completed
74	Ganta Durga Dhaarani	Aws Data Engineering Virtual Internship	213117102071	B.Sc.	2024-03-15	Completed
75	Ganta Durga Dhaarani	Aws Ai-Ml Virtual Internship	213117102071	B.Sc.	2024-03-16	Completed
76	Indhu Ganta	Aws Ai-Ml Virtual Internship	213117102072	B.Sc.	2024-03-15	Completed
77	Gottumukkala Tejaswini	Palo Alto Cybersecurity Virtual Internship	213117102073	B.Sc.	2024-03-10	Completed
78	Tejaswini Gottumukkala	Aws Ai-Ml Virtual Internship	213117102073	B.Sc.	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
79	Anusha Gowri	Aws Ai-Ml Virtual Internship	213117102074	B.Sc.	2024-03-14	Completed
80	Gudapati Vanaja	Aws Ai-Ml Virtual Internship	213117102075	B.Sc.	2024-03-14	Completed
81	Sai Gudla	Aws Ai-Ml Virtual Internship	213117102076	B.Sc.	2024-03-16	Completed
82	Gunturi Mani Meghana Devi Sri	Aws Ai-Ml Virtual Internship	213117102077	B.Sc.	2024-03-15	Completed
83	Sravya Jakkamsetti	Aws Ai-Ml Virtual Internship	213117102078	B.Sc.	2024-03-14	Completed
84	Jalasutram Hari Narasimha	Aws Ai-Ml Virtual Internship	213117102079	B.Sc.	2024-03-15	Completed
85	Javvadi Raghuram	Palo Alto Cybersecurity Virtual Internship	213117102080	B.Sc.	2024-03-09	Completed
86	Javvadi Raghuram	Aws Ai-Ml Virtual Internship	213117102080	B.Sc.	2024-03-15	Completed
87	Juttiga Sriram	Aws Ai-Ml Virtual Internship	213117102081	B.Sc.	2024-03-14	Completed
88	Juttiga Pavan Sai Kumar	Aws Ai-Ml Virtual Internship	213117102082	B.Sc.	2024-03-16	Completed
89	Kala Ganesh Kumar	Aws Ai-Ml Virtual Internship	213117102083	B.Sc.	2024-03-16	Completed
90	Kalidindi Lakshmi Saranya	Aws Ai-Ml Virtual Internship	213117102084	B.Sc.	2024-03-14	Completed
91	Jhansi Rani	Aws Ai-Ml Virtual Internship	213117102085	B.Sc.	2024-03-15	Completed
92	Kandula Shanmuk	Aws Ai-Ml Virtual Internship	213117102086	B.Sc.	2024-03-16	Completed
93	Chandra Sai Reddy	Aws Ai-Ml Virtual Internship	213117102087	B.Sc.	2024-03-15	Completed
94	Katari Umesh Chandra	Aws Ai-Ml Virtual Internship	213117102088	B.Sc.	2024-03-15	Completed
95	Kola Pranathi	Palo Alto Cybersecurity Virtual Internship	213117102089	B.Sc.	2024-03-10	Completed
96	Pranathi Kola	Aws Ai-Ml Virtual Internship	213117102089	B.Sc.	2024-03-15	Completed
97	Kollepara Eswar Sri Venkata Kumar	Aws Ai-Ml Virtual Internship	213117102090	B.Sc.	2024-03-15	Completed
98	Kolli Yesu Suresh Babu	Aws Ai-Ml Virtual Internship	213117102091	B.Sc.	2024-03-15	Completed
99	Gayathri Kommoju	Aws Ai-Ml Virtual Internship	213117102092	B.Sc.	2024-03-15	Completed
100	Kothuri Gayathri Naga Mani	Aws Ai-Ml Virtual Internship	213117102093	B.Sc.	2024-03-16	Completed
101	Kottapalli Ravi Teja	Aws Ai-Ml Virtual Internship	213117102094	B.Sc.	2024-03-16	Completed
102	Kukkala Venkata Chaitanya	Aws Ai-Ml Virtual Internship	213117102095	B.Sc.	2024-03-15	Completed
103	Kunapareddy Bhavana	Aws Ai-Ml Virtual Internship	213117102096	B.Sc.	2024-03-14	Completed
104	Kunapareddy Bhuvana	Aws Ai-Ml Virtual Internship	213117102097	B.Sc.	2024-03-14	Completed
105	Jaya Surya Seshu Kumar Lakkoju	Aws Ai-Ml Virtual Internship	213117102098	B.Sc.	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
106	Lankapalli Ravi Kumar	Aws Ai-Ml Virtual Internship	213117102099	B.Sc.	2024-03-15	Completed
107	Magham Venkata Navya Sri	Aws Ai-Ml Virtual Internship	213117102100	B.Sc.	2024-03-15	Completed
108	Mallula Aparna	Aws Ai-Ml Virtual Internship	213117102101	B.Sc.	2024-03-16	Completed
109	Mantena Hima Keerthi Lohitha	Aws Ai-Ml Virtual Internship	213117102102	B.Sc.	2024-03-15	Completed
110	Meegada Leela Naga Sowjanya	Aws Ai-Ml Virtual Internship	213117102103	B.Sc.	2024-03-15	Completed
111	Badiuddin Mohammad	Aws Ai-Ml Virtual Internship	213117102104	B.Sc.	2024-03-14	Completed
112	Srivalli Monduri	Aws Ai-Ml Virtual Internship	213117102105	B.Sc.	2024-03-14	Completed
113	Mulagapati Keerthi Sree	Aws Ai-Ml Virtual Internship	213117102106	B.Sc.	2024-03-15	Completed
114	Mylavarapu Bhanu	Aws Ai-Ml Virtual Internship	213117102107	B.Sc.	2024-03-14	Completed
115	Nadiminti Pushpa Naga Lakshmi Manasa	Aws Ai-Ml Virtual Internship	213117102108	B.Sc.	2024-03-15	Completed
116	Pala Kiran	Aws Ai-Ml Virtual Internship	213117102109	B.Sc.	2024-03-15	Completed
117	Divija Paluri	Aws Ai-Ml Virtual Internship	213117102110	B.Sc.	2024-03-14	Completed
118	Paudel James	Aws Ai-Ml Virtual Internship	213117102111	B.Sc.	2024-03-15	Completed
119	Pechetti Jayasri	Aws Ai-Ml Virtual Internship	213117102112	B.Sc.	2024-03-14	Completed
120	Krishna Mohan Peddinti	Aws Ai-Ml Virtual Internship	213117102113	B.Sc.	2024-03-14	Completed
121	Tirumani Shanmukhasai	Aws Ai-Ml Virtual Internship	213117102113	B.Sc.	2024-03-15	Completed
122	Penmatsa Hyndavi	Aws Ai-Ml Virtual Internship	213117102114	B.Sc.	2024-03-14	Completed
123	Penugonda Manikantha	Aws Ai-Ml Virtual Internship	213117102115	B.Sc.	2024-03-15	Completed
124	Rajanala Hema Gowri	Aws Ai-Ml Virtual Internship	213117102116	B.Sc.	2024-03-14	Completed
125	Chaitu Ramba	Aws Ai-Ml Virtual Internship	213117102117	B.Sc.	2024-03-14	Completed
126	Ravula Venkata Lakshmi Deepika	Aws Ai-Ml Virtual Internship	213117102118	B.Sc.	2024-03-15	Completed
127	Vasanthi Rudraraju	Aws Ai-Ml Virtual Internship	213117102119	B.Sc.	2024-03-14	Completed
128	Sabbithi Sunny	Aws Ai-Ml Virtual Internship	213117102120	B.Sc.	2024-03-15	Completed
129	Saidani Durgalakshmi	Aws Ai-Ml Virtual Internship	213117102121	B.Sc.	2024-03-14	Completed
130	Jaya Saidu	Aws Ai-Ml Virtual Internship	213117102122	B.Sc.	2024-03-14	Completed
131	Shivani Salipalli	Aws Ai-Ml Virtual Internship	213117102123	B.Sc.	2024-03-14	Completed
132	Sannamandra Prasanna	Aws Ai-Ml Virtual Internship	213117102124	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
133	Naga Satya Mohana Sattineni	Aws Ai-Ml Virtual Internship	213117102125	B.Sc.	2024-03-15	Completed
134	Seelam Sravanthi	Aws Ai-Ml Virtual Internship	213117102126	B.Sc.	2024-03-14	Completed
135	Seemakurthi Aasritha Lakshmi	Aws Ai-Ml Virtual Internship	213117102127	B.Sc.	2024-03-14	Completed
136	Shaik Shilar Beebi	Aws Ai-Ml Virtual Internship	213117102128	B.Sc.	2024-03-14	Completed
137	Tadi Mahimajyothi	Aws Ai-Ml Virtual Internship	213117102129	B.Sc.	2024-03-14	Completed
138	Tammu Jhansi Rani	Aws Ai-Ml Virtual Internship	213117102131	B.Sc.	2024-03-15	Completed
139	Tangella Bhavani	Aws Ai-Ml Virtual Internship	213117102132	B.Sc.	2024-03-14	Completed
140	Thota Geetha Durga Harani	Aws Ai-Ml Virtual Internship	213117102134	B.Sc.	2024-03-14	Completed
141	Tirumalasetti Tinoj Siva Sai Manikanta	Aws Ai-Ml Virtual Internship	213117102135	B.Sc.	2024-03-14	Completed
142	Tirumalasetty Tanuj Kumar	Aws Cloud Virtual Internship	213117102136	B.Sc.	2024-03-14	Completed
143	Tirumalasetty Tanuj Kumar	Aws Ai-Ml Virtual Internship	213117102136	B.Sc.	2024-03-15	Completed
144	Uppada Lakshmi	Aws Ai-Ml Virtual Internship	213117102137	B.Sc.	2024-03-14	Completed
145	Manojchand Usala	Aws Ai-Ml Virtual Internship	213117102138	B.Sc.	2024-03-15	Completed
146	Naga Venkata Durga Nikhil Uta	Aws Ai-Ml Virtual Internship	213117102139	B.Sc.	2024-03-15	Completed
147	Tarun Vaddi	Aws Ai-Ml Virtual Internship	213117102140	B.Sc.	2024-03-15	Completed
148	Vanam Bharath Nimmalu	Aws Ai-Ml Virtual Internship	213117102141	B.Sc.	2024-03-16	Completed
149	Velpuri Sai Hemanth	Aws Ai-Ml Virtual Internship	213117102142	B.Sc.	2024-03-14	Completed
150	Durga Sowjanya Vendra	Aws Ai-Ml Virtual Internship	213117102143	B.Sc.	2024-03-16	Completed
151	Vendra Pavani	Aws Ai-Ml Virtual Internship	213117102144	B.Sc.	2024-03-14	Completed
152	Annappa Yalamanchili	Aws Ai-Ml Virtual Internship	213117102145	B.Sc.	2024-03-14	Completed
153	Yarlagadda Tanusri	Aws Data Engineering Virtual Internship	213117102146	B.Sc.	2024-03-14	Completed
154	Yeluri Lakshmi Prasanna	Aws Ai-Ml Virtual Internship	213117102147	B.Sc.	2024-03-14	Completed
155	Komati Mohan Sai Durgesh	Aws Ai-Ml Virtual Internship	213117102195	B.Sc.	2024-03-14	Completed
156	Nimmala Daniyelu	Aws Ai-Ml Virtual Internship	213117109121	It	2024-03-15	Completed
157	Ainapudi Sravani	Aws Data Engineering Virtual Internship	213117109148	B.Sc.	2024-03-14	Completed
158	Alamuri H.N.S.Sri.Lakshmi	Aws Ai-Ml Virtual Internship	213117109149	B.Sc.	2024-03-14	Completed
159	Alluri Nyna Harshitha	Aws Ai-Ml Virtual Internship	213117109150	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
160	Ananthapalli Bindesh Sai	Aws Ai-Ml Virtual Internship	213117109151	B.Sc.	2024-03-14	Completed
161	Annam Mrudula	Aws Ai-Ml Virtual Internship	213117109152	B.Sc.	2024-03-14	Completed
162	Ayitha Venkata Naga Sai Dwaraka Srinivas	Aws Ai-Ml Virtual Internship	213117109153	B.Sc.	2024-03-15	Completed
163	Bellapu Durga Sushma Sravani	Aws Data Engineering Virtual Internship	213117109155	B.Sc.	2024-03-14	Completed
164	Bhupathiraju Chaya Sushma Sri	Aws Ai-Ml Virtual Internship	213117109156	B.Sc.	2024-03-14	Completed
165	Kittu Bhupathiraju	Aws Cloud Virtual Internship	213117109157	B.Sc.	2024-03-14	Completed
166	Bhupathiraju Venkata Krishnamraju	Aws Ai-Ml Virtual Internship	213117109157	B.Sc.	2024-03-16	Completed
167	Bonthu Naga Sri Sai Mahesh	Aws Ai-Ml Virtual Internship	213117109158	B.Sc.	2024-03-14	Completed
168	Botta Gowri Pushpa Latha	Aws Ai-Ml Virtual Internship	213117109159	B.Sc.	2024-03-14	Completed
169	Jayavardhan Buridi	Aws Ai-Ml Virtual Internship	213117109160	B.Sc.	2024-03-15	Completed
170	Channamsetti V Bhaskara Satyanarayana	Aws Ai-Ml Virtual Internship	213117109161	B.Sc.	2024-03-14	Completed
171	Chebrolu Kasi Naga Basavayya	Aws Data Engineering Virtual Internship	213117109162	B.Sc.	2024-03-14	Completed
172	Cheeday Harika Durga	Aws Ai-Ml Virtual Internship	213117109163	B.Sc.	2024-03-14	Completed
173	Meghana Trishi	Aws Ai-Ml Virtual Internship	213117109164	B.Sc.	2024-03-14	Completed
174	Chilaparasetti Rupa Sree	Aws Cloud Virtual Internship	213117109165	It	2024-03-15	Completed
175	Rupasree Chilaparasetti	Aws Ai-Ml Virtual Internship	213117109165	B.Sc.	2024-03-16	Completed
176	Chinta Omkar Prasad	Aws Ai-Ml Virtual Internship	213117109166	B.Sc.	2024-03-14	Completed
177	Chintala G S S Alekhya	Aws Ai-Ml Virtual Internship	213117109167	B.Sc.	2024-03-14	Completed
178	Chintalapati Sai Sruthi	Aws Cloud Virtual Internship	213117109168	B.Sc.	2024-03-14	Completed
179	Chintalapati Sai Sruthi	Aws Ai-Ml Virtual Internship	213117109168	B.Sc.	2024-03-16	Completed
180	Chintapalli Rohith Kumar Narasimha	Aws Ai-Ml Virtual Internship	213117109169	B.Sc.	2024-03-14	Completed
181	Chitikela Amrutha Phani Sai Eswari	Aws Ai-Ml Virtual Internship	213117109170	B.Sc.	2024-03-14	Completed
182	Chitturi Sai Sri Poojitha	Aws Ai-Ml Virtual Internship	213117109171	B.Sc.	2024-03-14	Completed
183	Dammuluri Gnana Prasanna	Aws Ai-Ml Virtual Internship	213117109172	B.Sc.	2024-03-14	Completed
184	Ushasree Dandu	Aws Data Engineering Virtual Internship	213117109173	B.Sc.	2024-03-14	Completed
185	Ushasree Dandu	Aws Ai-Ml Virtual Internship	213117109173	B.Sc.	2024-03-16	Completed
186	Dudaboina Sai Prasanthi	Aws Ai-Ml Virtual Internship	213117109174	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
187	Elubandi Bindu Sai Sri Priya	Aws Ai-Ml Virtual Internship	213117109175	B.Sc.	2024-03-14	Completed
188	Gadi Harsha	Aws Ai-Ml Virtual Internship	213117109176	B.Sc.	2024-03-14	Completed
189	Gadiraju Chandra Swarupa	Aws Ai-Ml Virtual Internship	213117109177	B.Sc.	2024-03-14	Completed
190	Gadiraju Naga Pravallika	Aws Ai-Ml Virtual Internship	213117109178	B.Sc.	2024-03-15	Completed
191	Ganta Revanth Sree	Aws Data Engineering Virtual Internship	213117109180	B.Sc.	2024-03-14	Completed
192	Godi Omi Sarvagnya	Aws Ai-Ml Virtual Internship	213117109182	B.Sc.	2024-03-14	Completed
193	Gorriparthi Bindu Priya	Aws Ai-Ml Virtual Internship	213117109183	B.Sc.	2024-03-14	Completed
194	Guraja Yaswanth Ganesh	Aws Ai-Ml Virtual Internship	213117109184	B.Sc.	2024-03-15	Completed
195	Dhanush Sai Kadali	Aws Ai-Ml Virtual Internship	213117109185	B.Sc.	2024-03-15	Completed
196	Hemalatha Kalidindi	Aws Ai-Ml Virtual Internship	213117109186	B.Sc.	2024-03-14	Completed
197	Kanumuru Veerendra Kiran Varma	Aws Ai-Ml Virtual Internship	213117109187	B.Sc.	2024-03-14	Completed
198	Karinki Sravani	Aws Ai-Ml Virtual Internship	213117109188	B.Sc.	2024-03-14	Completed
199	Karuturi Varshini	Aws Ai-Ml Virtual Internship	213117109189	B.Sc.	2024-03-14	Completed
200	Jeevan Kumar Katari	Aws Ai-Ml Virtual Internship	213117109190	B.Sc.	2024-03-14	Completed
201	Katta Siva Sandeep	Aws Ai-Ml Virtual Internship	213117109191	B.Sc.	2024-03-15	Completed
202	Divya Jyothi Ketha	Aws Ai-Ml Virtual Internship	213117109192	B.Sc.	2024-03-15	Completed
203	Yasaswini Killampalli	Aws Ai-Ml Virtual Internship	213117109193	B.Sc.	2024-03-15	Completed
204	Kishore Battula	Aws Ai-Ml Virtual Internship	213117109194	B.Sc.	2024-03-15	Completed
205	Komati Mohan Sai Durgesh	Aws Ai-Ml Virtual Internship	213117109195	It	2024-03-15	Completed
206	Koppada Vinay Venkata Aditya	Aws Ai-Ml Virtual Internship	213117109196	B.Sc.	2024-03-15	Completed
207	Prasanthi Korasikha	Aws Ai-Ml Virtual Internship	213117109199	B.Sc.	2024-03-14	Completed
208	Kukkala Lavanya	Aws Ai-Ml Virtual Internship	213117109200	B.Sc.	2024-03-15	Completed
209	Kuppala Devaki Krishnaveni	Aws Ai-Ml Virtual Internship	213117109201	B.Sc.	2024-03-14	Completed
210	Lokanti Ramya Sri	Aws Ai-Ml Virtual Internship	213117109202	B.Sc.	2024-03-14	Completed
211	Maddala K N Venkata Sri Ranganayakulu	Aws Ai-Ml Virtual Internship	213117109203	It	2024-03-15	Completed
212	Maddala K N Venkata Sri Ranganayakulu	Aws Ai-Ml Virtual Internship	213117109203	B.Sc.	2024-03-15	Completed
213	M V S P Manasa .	Aws Ai-Ml Virtual Internship	213117109204	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
214	Tulasi Devi Mantena	Aws Ai-Ml Virtual Internship	213117109205	B.Sc.	2024-03-14	Completed
215	Meela Indra Kumar	Aws Ai-Ml Virtual Internship	213117109206	B.Sc.	2024-03-14	Completed
216	Raziya Sultana Mohammad	Aws Ai-Ml Virtual Internship	213117109208	B.Sc.	2024-03-14	Completed
217	Moka Bhagya Lakshmi	Aws Ai-Ml Virtual Internship	213117109209	B.Sc.	2024-03-15	Completed
218	Naga Sai Mudde	Aws Ai-Ml Virtual Internship	213117109210	B.Sc.	2024-03-14	Completed
219	Nakka Venkat	Aws Ai-Ml Virtual Internship	213117109211	B.Sc.	2024-03-14	Completed
220	Padamata Sravani	Aws Ai-Ml Virtual Internship	213117109213	B.Sc.	2024-03-14	Completed
221	Pala Deva Ganesh	Aws Ai-Ml Virtual Internship	213117109214	It	2024-03-15	Completed
222	Pala Deva Ganesh	Aws Ai-Ml Virtual Internship	213117109214	B.Sc.	2024-03-15	Completed
223	Pamideti Tulasi Lakshmi Naga Durga	Aws Ai-Ml Virtual Internship	213117109215	B.Sc.	2024-03-15	Completed
224	Panuganti Sahithi	Aws Ai-Ml Virtual Internship	213117109216	B.Sc.	2024-03-15	Completed
225	Akshitha Parimi	Aws Data Engineering Virtual Internship	213117109217	B.Sc.	2024-03-15	Completed
226	Parimi Akshitha	Aws Ai-Ml Virtual Internship	213117109217	B.Sc.	2024-03-15	Completed
227	Penmethsa Aswitha	Aws Ai-Ml Virtual Internship	213117109218	B.Sc.	2024-03-14	Completed
228	Penmetsa Shushitha Sri	Aws Ai-Ml Virtual Internship	213117109219	B.Sc.	2024-03-15	Completed
229	Pilli Shanmukha Kumar	Aws Ai-Ml Virtual Internship	213117109220	B.Sc.	2024-03-14	Completed
230	Poojitha Kakarla	Aws Ai-Ml Virtual Internship	213117109221	B.Sc.	2024-03-15	Completed
231	Hari Kiran Mutyam Punnani	Aws Ai-Ml Virtual Internship	213117109222	B.Sc.	2024-03-14	Completed
232	Yasaswi Nagadurga Kasivisalakshi Rayaprolu	Aws Ai-Ml Virtual Internship	213117109223	B.Sc.	2024-03-15	Completed
233	Radha Gayathri Sagi	Aws Ai-Ml Virtual Internship	213117109224	B.Sc.	2024-03-15	Completed
234	Bhavya Sagiraju	Aws Ai-Ml Virtual Internship	213117109225	B.Sc.	2024-03-14	Completed
235	Jyothi Sanku	Aws Ai-Ml Virtual Internship	213117109226	B.Sc.	2024-03-15	Completed
236	Shaik Saphiya	Aws Ai-Ml Virtual Internship	213117109227	B.Sc.	2024-03-14	Completed
237	Sirigineedi Naga Phanindra	Aws Ai-Ml Virtual Internship	213117109229	B.Sc.	2024-03-15	Completed
238	Srinivasula Sai Venkata Sri Vaishnavi	Aws Ai-Ml Virtual Internship	213117109230	B.Sc.	2024-03-15	Completed
239	Sirisha Taragalla	Aws Ai-Ml Virtual Internship	213117109231	B.Sc.	2024-03-14	Completed
240	Thambabattula Pravallika	Aws Ai-Ml Virtual Internship	213117109232	B.Sc.	2024-03-16	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
241	Totdharamudi Chaitanya Ajay	Aws Ai-Ml Virtual Internship	213117109234	B.Sc.	2024-03-15	Completed
242	Sravani Satya Sree Tumu	Aws Ai-Ml Virtual Internship	213117109235	B.Sc.	2024-03-14	Completed
243	Tupuri Tejaswi	Aws Ai-Ml Virtual Internship	213117109236	B.Sc.	2024-03-15	Completed
244	Vadlamudi Madhu	Aws Ai-Ml Virtual Internship	213117109237	B.Sc.	2024-03-15	Completed
245	Vanka Yathik	Aws Cloud Virtual Internship	213117109238	It	2024-03-15	Completed
246	Vanka Yathik	Aws Cloud Virtual Internship	213117109238	It	2024-03-16	Completed
247	Vanka Yathik	Aws Ai-Ml Virtual Internship	213117109238	B.Sc.	2024-03-16	Completed
248	Sharonkumar Vantabattina	Aws Ai-Ml Virtual Internship	213117109239	B.Sc.	2024-03-14	Completed
249	Vardhanapu Richard Thomas	Aws Ai-Ml Virtual Internship	213117109240	B.Sc.	2024-03-15	Completed
250	Vari Guna Vardhan	Aws Ai-Ml Virtual Internship	213117109241	B.Sc.	2024-03-15	Completed
251	Vedangi Jayanth Satya Sai Srinivas	Aws Ai-Ml Virtual Internship	213117109243	B.Sc.	2024-03-14	Completed
252	Vegesna Hemanjali	Aws Ai-Ml Virtual Internship	213117109244	B.Sc.	2024-03-14	Completed
253	Vegesna Sivaji Raju	Aws Ai-Ml Virtual Internship	213117109245	B.Sc.	2024-03-14	Completed
254	Kusuma Zacharaiah	Aws Ai-Ml Virtual Internship	213117109246	B.Sc.	2024-03-14	Completed
255	Taraka Sannidi	Aws Ai-Ml Virtual Internship	213117109459	B.Sc.	2024-03-14	Completed
256	Venkata Sri Koushitha Ayinampudi	Aws Data Engineering Virtual Internship	213117121247	B.Sc.	2024-03-14	Completed
257	Jayasree Bolem	Aws Data Engineering Virtual Internship	213117121248	B.Sc.	2024-03-15	Completed
258	Sai Manikanta	Aws Data Engineering Virtual Internship	213117121249	B.Sc.	2024-03-15	Completed
259	Boyina Tarun Shekhar	Aws Data Engineering Virtual Internship	213117121251	B.Sc.	2024-03-14	Completed
260	Rajesh Varma	Aws Data Engineering Virtual Internship	213117121252	B.Sc.	2024-03-14	Completed
261	Dasari Ambika	Aws Data Engineering Virtual Internship	213117121253	B.Sc.	2024-03-15	Completed
262	Davala Renuka	Aws Data Engineering Virtual Internship	213117121254	B.Sc.	2024-03-14	Completed
263	Gandaboina Jahnavi	Aws Data Engineering Virtual Internship	213117121255	B.Sc.	2024-03-14	Completed
264	Gedala Krishnama Naidu	Aws Data Engineering Virtual Internship	213117121256	B.Sc.	2024-03-14	Completed
265	Gollamandala Riya Florence	Aws Data Engineering Virtual Internship	213117121258	B.Sc.	2024-03-14	Completed
266	Nanditha Gutam	Aws Data Engineering Virtual Internship	213117121259	B.Sc.	2024-03-14	Completed
267	Keerthi Prasanna Kadali	Aws Data Engineering Virtual Internship	213117121260	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
268	Siva Kumar Kancharlapalli	Aws Data Engineering Virtual Internship	213117121262	B.Sc.	2024-03-15	Completed
269	Kandulapati Amrutha Sri Naga Sai Charani	Aws Data Engineering Virtual Internship	213117121263	B.Sc.	2024-03-14	Completed
270	Kankatala Veera Lakshmi Vyshnavi	Aws Data Engineering Virtual Internship	213117121264	B.Sc.	2024-03-14	Completed
271	Korukonda Ramyasaisri	Aws Data Engineering Virtual Internship	213117121266	B.Sc.	2024-03-14	Completed
272	Sushma Koyye	Aws Data Engineering Virtual Internship	213117121267	B.Sc.	2024-03-14	Completed
273	Lakshmi Priya Madabhushi	Aws Data Engineering Virtual Internship	213117121269	B.Sc.	2024-03-14	Completed
274	Machha Eswar	Aws Data Engineering Virtual Internship	213117121270	B.Sc.	2024-03-14	Completed
275	Venky Mangipudi	Aws Data Engineering Virtual Internship	213117121271	B.Sc.	2024-03-14	Completed
276	Mohammad Uzma Gousia Affrin	Aws Data Engineering Virtual Internship	213117121272	B.Sc.	2024-03-14	Completed
277	Sri Lakshmi Sneha Mulagapati	Aws Data Engineering Virtual Internship	213117121273	B.Sc.	2024-03-14	Completed
278	Rama Tulasi Mypala	Aws Ai-Ml Virtual Internship	213117121274	B.Sc.	2024-03-14	Completed
279	Mypala Rama Tulasi	Aws Data Engineering Virtual Internship	213117121274	B.Sc.	2024-03-16	Completed
280	Chopperla Naga Alekhya	Aws Data Engineering Virtual Internship	213117121275	B.Sc.	2024-03-14	Completed
281	Hepsiba Rani	Aws Data Engineering Virtual Internship	213117121276	B.Sc.	2024-03-14	Completed
282	Divya Namala	Aws Data Engineering Virtual Internship	213117121277	B.Sc.	2024-03-14	Completed
283	Nunna Manjula	Aws Data Engineering Virtual Internship	213117121279	B.Sc.	2024-03-14	Completed
284	Pakalapati Asritha	Aws Data Engineering Virtual Internship	213117121280	B.Sc.	2024-03-14	Completed
285	Anvesh Peethala	Aws Data Engineering Virtual Internship	213117121281	B.Sc.	2024-03-14	Completed
286	Penmetsa Hema Sai Devi	Aws Data Engineering Virtual Internship	213117121283	B.Sc.	2024-03-14	Completed
287	Posinasetty Sai Priyanka	Aws Ai-Ml Virtual Internship	213117121286	B.Sc.	2024-03-14	Completed
288	Reddy Harshitha Devi	Aws Data Engineering Virtual Internship	213117121288	B.Sc.	2024-03-14	Completed
289	Devi Deepthi Samineni	Aws Data Engineering Virtual Internship	213117121289	B.Sc.	2024-03-14	Completed
290	Sidagam Pujitha	Palo Alto Cybersecurity Virtual Internship	213117121290	B.Sc.	2024-03-10	Completed
291	Pujitha Sidagam	Aws Data Engineering Virtual Internship	213117121290	B.Sc.	2024-03-15	Completed
292	Siddamsetti Keerthana	Aws Data Engineering Virtual Internship	213117121291	B.Sc.	2024-03-14	Completed
293	Penumala Vijaya Bharathi	Aws Data Engineering Virtual Internship	213117121291	B.Sc.	2024-03-14	Completed
294	Sai Sri Tadicharla	Aws Data Engineering Virtual Internship	213117121292	B.Sc.	2024-03-15	Completed

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295	Tirumani Divya Sree	Aws Data Engineering Virtual Internship	213117121293	B.Sc.	2024-03-14	Completed
296	Dhana Lakshmi Sri Harsha Vamisetti	Aws Data Engineering Virtual Internship	213117121294	B.Sc.	2024-03-14	Completed
297	Guna Shekar	Aws Ai-Ml Virtual Internship	213117121295	B.Sc.	2024-03-14	Completed
298	Vasa Gopika	Aws Ai-Ml Virtual Internship	213117121297	B.Sc.	2024-03-14	Completed
299	Vatsavai Dharma Tejas Varma	Aws Data Engineering Virtual Internship	213117121298	B.Sc.	2024-03-14	Completed
300	Veeramallu Saraswathi Rao	Aws Data Engineering Virtual Internship	213117121299	B.Sc.	2024-03-14	Completed
301	Jyotsna Vegesna	Aws Data Engineering Virtual Internship	213117121300	B.Sc.	2024-03-15	Completed
302	Adabala Mrudhula Satya Sri	Aws Ai-Ml Virtual Internship	213117137301	B.Sc.	2024-03-14	Completed
303	Addala Suma Devi	Aws Ai-Ml Virtual Internship	213117137302	B.Sc.	2024-03-15	Completed
304	Akula Jaya Suma Gayathri	Aws Ai-Ml Virtual Internship	213117137303	B.Sc.	2024-03-15	Completed
305	Bandaru Naga Sai Sravani	Aws Ai-Ml Virtual Internship	213117137304	B.Sc.	2024-03-15	Completed
306	Puja Bandaru	Aws Ai-Ml Virtual Internship	213117137305	B.Sc.	2024-03-14	Completed
307	Barnala Salman Raju	Aws Ai-Ml Virtual Internship	213117137307	B.Sc.	2024-03-15	Completed
308	Karunakar Bonam	Aws Ai-Ml Virtual Internship	213117137308	B.Sc.	2024-03-15	Completed
309	Nikitha Chakka	Aws Ai-Ml Virtual Internship	213117137309	B.Sc.	2024-03-15	Completed
310	Cheerala Durga Bhavani	Aws Ai-Ml Virtual Internship	213117137310	B.Sc.	2024-03-15	Completed
311	Prasanthi Chennu	Aws Ai-Ml Virtual Internship	213117137311	B.Sc.	2024-03-14	Completed
312	Chintapalli Hari Krishna	Aws Ai-Ml Virtual Internship	213117137314	B.Sc.	2024-03-15	Completed
313	Chodisetty Radha Samhitha	Aws Ai-Ml Virtual Internship	213117137315	B.Sc.	2024-03-15	Completed
314	Daki Jons Melody	Aws Ai-Ml Virtual Internship	213117137316	B.Sc.	2024-03-15	Completed
315	Dandu Sreya	Aws Ai-Ml Virtual Internship	213117137317	B.Sc.	2024-03-14	Completed
316	Darapureddy Tarun Babu	Aws Ai-Ml Virtual Internship	213117137318	B.Sc.	2024-03-15	Completed
317	Dasari Ravi Teja Sri Venkata Shyam	Aws Ai-Ml Virtual Internship	213117137319	B.Sc.	2024-03-15	Completed
318	Vasu Sai	Aws Ai-Ml Virtual Internship	213117137320	B.Sc.	2024-03-15	Completed
319	Devatha Venkata Sravanthi	Aws Ai-Ml Virtual Internship	213117137321	B.Sc.	2024-03-15	Completed
320	Gopi Sankar Dulam	Aws Ai-Ml Virtual Internship	213117137324	B.Sc.	2024-03-15	Completed
321	Dundi Asish Kumar	Aws Ai-Ml Virtual Internship	213117137325	B.Sc.	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
322	Ebba Deva Manikanta	Aws Ai-Ml Virtual Internship	213117137326	B.Sc.	2024-03-15	Completed
323	Edi Vijaya Babu	Aws Ai-Ml Virtual Internship	213117137327	B.Sc.	2024-03-15	Completed
324	Gandham Hema Chandrika	Aws Ai-Ml Virtual Internship	213117137329	B.Sc.	2024-03-14	Completed
325	Gandikota Shanthi Priya	Aws Ai-Ml Virtual Internship	213117137330	B.Sc.	2024-03-14	Completed
326	Ganireddy Jagan Kumar	Aws Ai-Ml Virtual Internship	213117137331	B.Sc.	2024-03-15	Completed
327	Goketi Venkat Rao	Aws Ai-Ml Virtual Internship	213117137333	B.Sc.	2024-03-15	Completed
328	Gonnabattula Amrutha Varshini	Aws Ai-Ml Virtual Internship	213117137334	B.Sc.	2024-03-15	Completed
329	Gudivada Hema	Aws Ai-Ml Virtual Internship	213117137336	B.Sc.	2024-03-15	Completed
330	Gudla Naga Pavan Sai	Aws Ai-Ml Virtual Internship	213117137337	B.Sc.	2024-03-15	Completed
331	Gunti Kumar Babu	Aws Ai-Ml Virtual Internship	213117137338	B.Sc.	2024-03-15	Completed
332	Indukuri Hemitha Phani Sujitha Sri	Aws Ai-Ml Virtual Internship	213117137339	B.Sc.	2024-03-15	Completed
333	Durga Bhavani Jalasuthram	Aws Ai-Ml Virtual Internship	213117137340	B.Sc.	2024-03-15	Completed
334	Jalem Gargi Priya	Aws Ai-Ml Virtual Internship	213117137341	B.Sc.	2024-03-15	Completed
335	Jayamangala Priya Darshini	Aws Ai-Ml Virtual Internship	213117137342	B.Sc.	2024-03-14	Completed
336	Jogi Ashok Babu	Aws Ai-Ml Virtual Internship	213117137343	B.Sc.	2024-03-14	Completed
337	Joguripati Krishan Kartheek	Aws Ai-Ml Virtual Internship	213117137344	B.Sc.	2024-03-15	Completed
338	Mouni Kadali	Aws Ai-Ml Virtual Internship	213117137345	B.Sc.	2024-03-15	Completed
339	Kadali Sai Manoj	Aws Ai-Ml Virtual Internship	213117137346	B.Sc.	2024-03-15	Completed
340	Kalidindi G V Siva Ramaraju	Aws Ai-Ml Virtual Internship	213117137347	B.Sc.	2024-03-15	Completed
341	Kalidindi Naga Sai Surendra Varma	Aws Ai-Ml Virtual Internship	213117137348	B.Sc.	2024-03-15	Completed
342	Kantheti Gopi Venkata Swami	Aws Ai-Ml Virtual Internship	213117137349	B.Sc.	2024-03-15	Completed
343	K Mounika	Aws Ai-Ml Virtual Internship	213117137350	B.Sc.	2024-03-15	Completed
344	Karumujji Kalyan Ram	Aws Ai-Ml Virtual Internship	213117137351	B.Sc.	2024-03-15	Completed
345	Katakam Naga Sai Lakshmi Bhavana	Aws Ai-Ml Virtual Internship	213117137352	B.Sc.	2024-03-15	Completed
346	Katreddy Chaitanya Durga	Aws Ai-Ml Virtual Internship	213117137353	B.Sc.	2024-03-14	Completed
347	Katreddi Yethendra Swamy	Aws Ai-Ml Virtual Internship	213117137354	B.Sc.	2024-03-15	Completed
348	Katta Naga Venkata Satyanarayana	Aws Ai-Ml Virtual Internship	213117137355	B.Sc.	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
349	Katta Trisha	Aws Ai-Ml Virtual Internship	213117137356	B.Sc.	2024-03-15	Completed
350	Katta Venkata Lokesh	Aws Ai-Ml Virtual Internship	213117137357	B.Sc.	2024-03-15	Completed
351	Sukesh Ketha	Aws Ai-Ml Virtual Internship	213117137358	B.Sc.	2024-03-14	Completed
352	Kodamanchili Charan Teja	Aws Ai-Ml Virtual Internship	213117137359	B.Sc.	2024-03-15	Completed
353	Kolli Ramya	Aws Ai-Ml Virtual Internship	213117137360	B.Sc.	2024-03-15	Completed
354	Kommana Shanmukha Sai	Aws Ai-Ml Virtual Internship	213117137361	B.Sc.	2024-03-15	Completed
355	Kiran Sai Kopparthi	Aws Ai-Ml Virtual Internship	213117137362	It	2024-03-15	Completed
356	Kosuri Namitha Sri	Aws Ai-Ml Virtual Internship	213117137363	B.Sc.	2024-03-15	Completed
357	Kothapalli Aryesh	Aws Ai-Ml Virtual Internship	213117137364	B.Sc.	2024-03-15	Completed
358	Satyanarayana Koya	Aws Ai-Ml Virtual Internship	213117137365	B.Sc.	2024-03-14	Completed
359	Manthena Naga Sruthi Sri	Aws Ai-Ml Virtual Internship	213117137366	B.Sc.	2024-03-15	Completed
360	Manupati Rajesh	Aws Ai-Ml Virtual Internship	213117137367	B.Sc.	2024-03-14	Completed
361	Moganti Saivyshnavi	Aws Ai-Ml Virtual Internship	213117137368	B.Sc.	2024-03-15	Completed
362	Mohamad Anass	Aws Ai-Ml Virtual Internship	213117137369	B.Sc.	2024-03-14	Completed
363	Jyothika Murapala	Aws Ai-Ml Virtual Internship	213117137370	B.Sc.	2024-03-15	Completed
364	Myla Samson	Aws Ai-Ml Virtual Internship	213117137371	B.Sc.	2024-03-15	Completed
365	Nagaraju Bharath Kumar Varma	Aws Ai-Ml Virtual Internship	213117137372	B.Sc.	2024-03-14	Completed
366	Caleb Nakka	Aws Ai-Ml Virtual Internship	213117137373	B.Sc.	2024-03-14	Completed
367	Nandamuri Praveen Kumar	Aws Ai-Ml Virtual Internship	213117137374	B.Sc.	2024-03-15	Completed
368	Neelapu Satya Prakash	Aws Ai-Ml Virtual Internship	213117137375	B.Sc.	2024-03-15	Completed
369	Pyla Monali	Aws Data Engineering Virtual Internship	213117137377	B.Sc.	2024-03-15	Completed
370	Pyla Monali	Aws Ai-Ml Virtual Internship	213117137377	B.Sc.	2024-03-15	Completed
371	Pallem Chinna Abraham	Aws Ai-Ml Virtual Internship	213117137378	B.Sc.	2024-03-15	Completed
372	Pechetti Bhanu Sai Sree	Aws Ai-Ml Virtual Internship	213117137379	B.Sc.	2024-03-15	Completed
373	Sreeja Pedamallu	Aws Ai-Ml Virtual Internship	213117137380	B.Sc.	2024-03-15	Completed
374	Pedapudi Nandini	Aws Ai-Ml Virtual Internship	213117137381	B.Sc.	2024-03-15	Completed
375	Penmetsa Jeeshitha	Aws Ai-Ml Virtual Internship	213117137382	B.Sc.	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
376	Penmetsa Phani Sai Ramana Varma	Aws Ai-Ml Virtual Internship	213117137383	B.Sc.	2024-03-15	Completed
377	Pichikala Harsha Nandini	Aws Ai-Ml Virtual Internship	213117137384	B.Sc.	2024-03-15	Completed
378	Potnuri Mounika	Aws Ai-Ml Virtual Internship	213117137385	B.Sc.	2024-03-14	Completed
379	Potturi Sri Yoshitha	Aws Ai-Ml Virtual Internship	213117137386	B.Sc.	2024-03-15	Completed
380	Raagu Devi Navya Sri	Aws Ai-Ml Virtual Internship	213117137387	B.Sc.	2024-03-15	Completed
381	Rompicherla Sai Bhavani	Aws Ai-Ml Virtual Internship	213117137388	B.Sc.	2024-03-15	Completed
382	Rudraraju Madhu Nisha	Aws Ai-Ml Virtual Internship	213117137389	B.Sc.	2024-03-15	Completed
383	Sanaboyina Thanu Sri	Aws Data Engineering Virtual Internship	213117137390	B.Sc.	2024-03-14	Completed
384	Sanaboyina Thanu Sri	Aws Ai-Ml Virtual Internship	213117137390	B.Sc.	2024-03-15	Completed
385	Shaik Shoaib Ali	Aws Ai-Ml Virtual Internship	213117137392	B.Sc.	2024-03-15	Completed
386	Sheik Shabeena	Aws Ai-Ml Virtual Internship	213117137393	B.Sc.	2024-03-15	Completed
387	Tamma Koti Yasaswi	Aws Ai-Ml Virtual Internship	213117137394	B.Sc.	2024-03-15	Completed
388	Tammu Sai	Aws Ai-Ml Virtual Internship	213117137395	B.Sc.	2024-03-15	Completed
389	Thota Bhuvana Naga Lakshmi Durga	Aws Ai-Ml Virtual Internship	213117137396	B.Sc.	2024-03-15	Completed
390	Thota Naga Bhargavi	Aws Ai-Ml Virtual Internship	213117137397	B.Sc.	2024-03-15	Completed
391	Thota Ravi Shankar Naidu	Aws Ai-Ml Virtual Internship	213117137398	B.Sc.	2024-03-15	Completed
392	Thota Swarna Kumari	Aws Ai-Ml Virtual Internship	213117137399	B.Sc.	2024-03-15	Completed
393	Udayana Trilochana	Aws Ai-Ml Virtual Internship	213117137400	B.Sc.	2024-03-15	Completed
394	Uppalapati Sai Lakshmi	Aws Ai-Ml Virtual Internship	213117137402	B.Sc.	2024-03-15	Completed
395	Vegesna Sitaramaraju	Aws Ai-Ml Virtual Internship	213117137403	B.Sc.	2024-03-15	Completed
396	Velivela Kiran Veera Venkata Satyanarayana	Aws Ai-Ml Virtual Internship	213117137404	B.Sc.	2024-03-15	Completed
397	Vempatapu Madhavi Durga	Aws Ai-Ml Virtual Internship	213117137405	B.Sc.	2024-03-15	Completed
398	Venna Pooja Satya Sree Pravalika	Aws Ai-Ml Virtual Internship	213117137406	B.Sc.	2024-03-15	Completed
399	Volipilli Gowri Mallika	Aws Ai-Ml Virtual Internship	213117137407	B.Sc.	2024-03-15	Completed
400	Adabala Reshma Satya	Aws Data Engineering Virtual Internship	213117141408	B.Sc.	2024-03-14	Completed
401	Sowmya Satya Durga Tejaswini Addagalla	Aws Data Engineering Virtual Internship	213117141409	B.Sc.	2024-03-14	Completed
402	Naga Lakshmi Arava	Palo Alto Cybersecurity Virtual Internship	213117141410	B.Sc.	2024-03-10	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
403	Aravapalli Durga Prasad	Aws Data Engineering Virtual Internship	213117141411	B.Sc.	2024-03-14	Completed
404	Badeti Purna Kanaka Mahalakshmi	Aws Data Engineering Virtual Internship	213117141412	B.Sc.	2024-03-14	Completed
405	Sai Gopichand Basina	Palo Alto Cybersecurity Virtual Internship	213117141413	B.Sc.	2024-03-09	Completed
406	Basina Sai Gopichand	Aws Data Engineering Virtual Internship	213117141413	B.Sc.	2024-03-15	Completed
407	Nandini Birudugadda	Aws Data Engineering Virtual Internship	213117141414	B.Sc.	2024-03-14	Completed
408	Charan Datta	Aws Cloud Virtual Internship	213117141415	Bsc (Hons)	2024-03-15	Completed
409	Pavan Kalyan Chillakallu	Aws Data Engineering Virtual Internship	213117141416	B.Sc.	2024-03-15	Completed
410	Davaleswarapu Likitha Srivalli	Aws Data Engineering Virtual Internship	213117141417	B.Sc.	2024-03-14	Completed
411	Dogga Lakshmi Harsha Sri Priyanka	Aws Ai-Ml Virtual Internship	213117141418	B.Sc.	2024-03-16	Completed
412	Gogu Sowjanya	Aws Data Engineering Virtual Internship	213117141419	B.Sc.	2024-03-16	Completed
413	Gopisetti Devi Saranya	Aws Data Engineering Virtual Internship	213117141422	B.Sc.	2024-03-15	Completed
414	Keerthi Gottumukkala	Aws Data Engineering Virtual Internship	213117141423	B.Sc.	2024-03-14	Completed
415	Illa Bavya Sri Satya	Aws Data Engineering Virtual Internship	213117141424	B.Sc.	2024-03-14	Completed
416	Vaishnavi Varma	Aws Data Engineering Virtual Internship	213117141425	B.Sc.	2024-03-14	Completed
417	Javvadi Anitha Devi	Aws Data Engineering Virtual Internship	213117141426	B.Sc.	2024-03-14	Completed
418	Kadiyam Veera Venkata Manideep	Aws Data Engineering Virtual Internship	213117141427	B.Sc.	2024-03-14	Completed
419	Karanam Harsha Deepil	Aws Data Engineering Virtual Internship	213117141429	B.Sc.	2024-03-15	Completed
420	Ajith Katta	Palo Alto Cybersecurity Virtual Internship	213117141430	B.Sc.	2024-03-10	Completed
421	Ajith Babu Katta	Aws Data Engineering Virtual Internship	213117141430	B.Sc.	2024-03-15	Completed
422	Kesana Gayathri	Aws Data Engineering Virtual Internship	213117141431	B.Sc.	2024-03-14	Completed
423	Beulah Kothapalli	Aws Data Engineering Virtual Internship	213117141432	B.Sc.	2024-03-14	Completed
424	Kucharlapati Babysri Anudeepthi	Aws Data Engineering Virtual Internship	213117141433	It	2024-03-15	Completed
425	Lingampalli Amitha	Aws Data Engineering Virtual Internship	213117141434	B.Sc.	2024-03-15	Completed
426	Niharika Mamidi	Aws Data Engineering Virtual Internship	213117141435	B.Sc.	2024-03-14	Completed
427	Harish Mekala	Aws Data Engineering Virtual Internship	213117141436	B.Sc.	2024-03-14	Completed
428	Miriyala Praveen	Aws Data Engineering Virtual Internship	213117141437	B.Sc.	2024-03-14	Completed
429	Muddala Yashodharani	Aws Data Engineering Virtual Internship	213117141438	B.Sc.	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
430	Jahnavi Mudunuri	Aws Data Engineering Virtual Internship	213117141439	It	2024-03-15	Completed
431	Nagaraju Likhitha	Aws Ai-Ml Virtual Internship	213117141440	B.Sc.	2024-03-14	Completed
432	Netala Rajesh	Aws Data Engineering Virtual Internship	213117141441	B.Sc.	2024-03-14	Completed
433	Bhanu Sailaja Oggu	Aws Data Engineering Virtual Internship	213117141442	B.Sc.	2024-03-14	Completed
434	Deepika Ogireddy	Aws Data Engineering Virtual Internship	213117141443	B.Sc.	2024-03-14	Completed
435	Mounika Penmetsa	Aws Data Engineering Virtual Internship	213117141445	B.Sc.	2024-03-14	Completed
436	Penugonda Mounika	Aws Data Engineering Virtual Internship	213117141446	B.Sc.	2024-03-14	Completed
437	Peteti Uma Maheswari	Aws Data Engineering Virtual Internship	213117141447	B.Sc.	2024-03-14	Completed
438	Sravani Potnuri	Aws Data Engineering Virtual Internship	213117141448	B.Sc.	2024-03-14	Completed
439	Ranga Chinmayi	Aws Data Engineering Virtual Internship	213117141450	B.Sc.	2024-03-16	Completed
440	Sanku Syamala Sai Prasanna	Aws Data Engineering Virtual Internship	213117141451	B.Sc.	2024-03-14	Completed
441	Akshara Thota	Aws Data Engineering Virtual Internship	213117141453	B.Sc.	2024-03-14	Completed
442	Thota Kanaka Durga	Aws Data Engineering Virtual Internship	213117141454	B.Sc.	2024-03-14	Completed
443	Uppala Sai Lohitha	Aws Data Engineering Virtual Internship	213117141455	B.Sc.	2024-03-14	Completed
444	Vepada Deepika	Aws Data Engineering Virtual Internship	213117141456	B.Sc.	2024-03-15	Completed
445	Yarakaraju Himaja	Aws Data Engineering Virtual Internship	213117141457	B.Sc.	2024-03-14	Completed
446	Yatham.Jhansi Prasanna	Aws Data Engineering Virtual Internship	213117141458	B.Sc.	2024-03-14	Completed
447	Achanta Madhavi Phani Lalitha Ramyasri	Aws Data Engineering Virtual Internship	213118200001	Bcom	2024-03-14	Completed
448	Alluri Sai Venkata Rajesh Varma	Aws Data Engineering Virtual Internship	213118200003	Bcom	2024-03-15	Completed
449	Bale Bhavani	Aws Data Engineering Virtual Internship	213118200004	Bcom	2024-03-15	Completed
450	Jitendra Naga Kumar Barre	Aws Data Engineering Virtual Internship	213118200005	Bcom	2024-03-16	Completed
451	Bobbala Gagana	Aws Ai-Ml Virtual Internship	213118200006	Bcom	2024-03-15	Completed
452	Sandeep Prajwal	Aws Data Engineering Virtual Internship	213118200007	Bcom	2024-03-16	Completed
453	Boddu Durga Venkana Sasank	Aws Data Engineering Virtual Internship	213118200008	Bcom	2024-03-14	Completed
454	Jayanth Cheepu	Aws Data Engineering Virtual Internship	213118200009	Bcom	2024-03-14	Completed
455	Bharath Balaji Varma Chekuri	Aws Data Engineering Virtual Internship	213118200010	Bcom	2024-03-14	Completed
456	Chellaboina Sanjay Siva Kumar	Aws Data Engineering Virtual Internship	213118200011	Bcom	2024-03-14	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
457	Chennamsetti Kiran	Aws Data Engineering Virtual Internship	213118200012	Bcom	2024-03-15	Completed
458	Chintalapati Vamsi Varma	Aws Data Engineering Virtual Internship	213118200013	Bcom	2024-03-14	Completed
459	Nikhil Chippada	Aws Data Engineering Virtual Internship	213118200014	Bcom	2024-03-14	Completed
460	Deshpet Nikitha	Aws Data Engineering Virtual Internship	213118200015	Bcom	2024-03-15	Completed
461	Gadiraju Prudhvi Nikith Varma	Aws Data Engineering Virtual Internship	213118200016	Bcom	2024-03-15	Completed
462	Ganta Bharath Kumar	Aws Data Engineering Virtual Internship	213118200017	Bcom	2024-03-15	Completed
463	Gorle Manikanta	Aws Data Engineering Virtual Internship	213118200019	Bcom	2024-03-14	Completed
464	Jampana H V Sai Rama Koteswara Raju	Aws Data Engineering Virtual Internship	213118200021	Bcom	2024-03-16	Completed
465	Javvadi Lalitha	Aws Data Engineering Virtual Internship	213118200022	Bcom	2024-03-15	Completed
466	Lohitha Kadali	Aws Data Engineering Virtual Internship	213118200023	Bcom	2024-03-15	Completed
467	Kakulapati Naveen	Aws Data Engineering Virtual Internship	213118200024	Bcom	2024-03-15	Completed
468	Kandulapati Venkata Sai Prasad	Aws Data Engineering Virtual Internship	213118200025	Bcom	2024-03-15	Completed
469	Kalyan Varma	Aws Data Engineering Virtual Internship	213118200026	Bcom	2024-03-15	Completed
470	Phani Kasireddy Phani Kasireddy	Aws Data Engineering Virtual Internship	213118200027	Bcom	2024-03-15	Completed
471	Kondaveti Murali	Aws Data Engineering Virtual Internship	213118200028	Bcom	2024-03-14	Completed
472	Kondeti Mahalakshmi	Aws Data Engineering Virtual Internship	213118200029	Bcom	2024-03-14	Completed
473	Kopparthi Sri Harsha	Aws Data Engineering Virtual Internship	213118200031	Bcom	2024-03-15	Completed
474	Syam Korada	Aws Data Engineering Virtual Internship	213118200032	Bcom	2024-03-15	Completed
475	Madireddy Praveen Kumar	Aws Data Engineering Virtual Internship	213118200033	Bcom	2024-03-16	Completed
476	Manisha Das	Aws Data Engineering Virtual Internship	213118200034	Bcom	2024-03-15	Completed
477	Medidi Dayana	Aws Data Engineering Virtual Internship	213118200035	Bcom	2024-03-15	Completed
478	Nadimpalli Nithin Teja	Aws Data Engineering Virtual Internship	213118200037	Bcom	2024-03-15	Completed
479	Perikala Vikas Chakravathy	Aws Data Engineering Virtual Internship	213118200039	Bcom	2024-03-15	Completed
480	Harini Periketi	Aws Data Engineering Virtual Internship	213118200040	Bcom	2024-03-15	Completed
481	Pinnamraju Mohit Varma	Aws Data Engineering Virtual Internship	213118200041	Bcom	2024-03-14	Completed
482	Moshe Poleti Poleti	Aws Data Engineering Virtual Internship	213118200042	It	2024-03-15	Completed
483	Moshe Poleti	Aws Data Engineering Virtual Internship	213118200042	Bcom	2024-03-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
484	Teja Poreddi	Aws Data Engineering Virtual Internship	213118200043	Bcom	2024-03-14	Completed
485	Prathipati Naveen Sai Krishna	Aws Data Engineering Virtual Internship	213118200044	Bcom	2024-03-14	Completed
486	Rayinuthula Sindhu	Aws Data Engineering Virtual Internship	213118200045	Bcom	2024-03-15	Completed
487	Revuri L N V S S S Tulasi	Aws Data Engineering Virtual Internship	213118200046	Bcom	2024-03-14	Completed
488	Vijay Kumar Sabbarapu	Aws Data Engineering Virtual Internship	213118200047	B.Voc	2024-03-14	Completed
489	Saipu Tejaswini	Aws Data Engineering Virtual Internship	213118200048	Bcom	2024-03-15	Completed
490	Billy Paul Sarabu	Aws Data Engineering Virtual Internship	213118200049	Bcom	2024-03-15	Completed
491	Siva Saripalli	Aws Data Engineering Virtual Internship	213118200050	Bcom	2024-03-14	Completed
492	Sayana Kusuma Sri	Aws Data Engineering Virtual Internship	213118200051	Bcom	2024-03-15	Completed
493	Seesala Rama Krishna Prasad	Aws Data Engineering Virtual Internship	213118200052	Bcom	2024-03-14	Completed
494	Shaik Aarifa	Aws Cloud Virtual Internship	213118200053	Bcom	2024-03-15	Completed
495	Shaik Aarifa	Aws Data Engineering Virtual Internship	213118200053	Bcom	2024-03-15	Completed
496	Nazeer Sheik	Aws Data Engineering Virtual Internship	213118200054	Bcom	2024-03-14	Completed
497	Talluri Ashish Raj	Aws Data Engineering Virtual Internship	213118200055	Bcom	2024-03-15	Completed
498	Tanneedi Naga Venkata Pradeep	Aws Data Engineering Virtual Internship	213118200056	Bcom	2024-03-15	Completed
499	Kaushik Telagamsetti	Aws Data Engineering Virtual Internship	213118200057	Bcom	2024-03-15	Completed
500	Tummapudi Narendra Balaji	Aws Data Engineering Virtual Internship	213118200058	Bcom	2024-03-15	Completed
501	Indrani Vatala	Aws Data Engineering Virtual Internship	213118200059	Bcom	2024-03-14	Completed
502	Jaswanth Varma Vegesna	Aws Data Engineering Virtual Internship	213118200060	Bcom	2024-03-14	Completed
503	Venkat Vegesna	Aws Data Engineering Virtual Internship	213118200061	Bcom	2024-03-15	Completed
504	Vempatapu Kanna	Aws Data Engineering Virtual Internship	213118200062	Bcom	2024-03-15	Completed
505	Yajjala Lavanya Mahima	Aws Data Engineering Virtual Internship	213118200064	Bcom	2024-03-15	Completed
506	Yeseburaju Yandamuri	Aws Data Engineering Virtual Internship	213118200065	Bcom	2024-03-14	Completed
507	Chanti Yenugupalli	Aws Data Engineering Virtual Internship	213118200066	Bcom	2024-03-15	Completed
508	Vinjamuri Kranthi Kumar	Aws Data Engineering Virtual Internship	213118300063	Bcom	2024-03-15	Completed
509	Suneetha Chintala	Aws Ai-Ml Virtual Internship	21317102060	B.Sc.	2024-03-15	Completed
510	Krishna Durga Prasad Padavala	Palo Alto Cybersecurity Virtual Internship	223117102061	Mpcs	2024-03-10	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
511	Vasa Durga Naga Sai	Aws Ai-Ml Virtual Internship	213117121296	B.Sc.	2024-03-14	Completed
512	Bandaru Subhash	Aws Ai-Ml Virtual Internship	213117137306	B.Sc.	2024-03-15	Completed
513	Chilaka Surya Praveen	Aws Ai-Ml Virtual Internship	213117137312	B.Sc.	2024-03-15	Completed
514	Chinnaparapu Manoj	Aws Ai-Ml Virtual Internship	213117137313	B.Sc.	2024-03-15	Completed
515	Teja Sai	Aws Ai-Ml Virtual Internship	213117137322	B.Sc.	2024-03-15	Completed
516	Donthala Venkata Ramana	Aws Ai-Ml Virtual Internship	213117137323	B.Sc.	2024-03-15	Completed
517	Galidevara Manikanta	Aws Ai-Ml Virtual Internship	213117137328	B.Sc.	2024-03-15	Completed
518	Chandini Gubbala	Aws Ai-Ml Virtual Internship	213117137335	B.Sc.	2024-03-15	Completed
519	Kiran Kopparthi	Aws Ai-Ml Virtual Internship	213117137362	B.Sc.	2024-03-15	Completed

COHORT 8


Cohort Activity
Apr 2024 - Jun 2024
Cohort 10
Cohort 9
Cohort 8
Cohort 7
5
Applied
484
Approved
0
Certificate Verified
489
Assessment Completed
456
Internship Certificate Issued
33
Rejected
Applied
Approved
Certificate Verified
Rejected
Assessment Completed
Internship Certificate Issued
Aws
Juniper
Paloalto
Fortinet
Blueprism
Alteryx
Microchip
Celonis
Uipath
Zscaler
Bentley
Google
Altair
EdgeSkills
Ansys
Wadhwani Foundation
Midas
Gender
214
Male
270
Female
0
Other
View More Details

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EDUSKILLS LONG TERM ONLINE INTERNSHIP ENROLLED STUDENTS LIST

COHORT - 8

B.Sc & B.Com 2023-2024

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
1	Agudu Varshitha	Aws Data Engineering Virtual Internship	213117101001	B.Sc.	2024-03-27	Completed
2	Akula Ram Prasad	Aws Data Engineering Virtual Internship	213117101002	B.Sc.	2024-03-27	Completed
3	Golagani Hima Harshini	Aws Data Engineering Virtual Internship	213117101013	B.Sc.	2024-04-10	Completed
4	Sai Gopichand Basina	Aws Ai-Ml Virtual Internship	213117102013	B.Sc.	2024-04-15	Completed
5	Pavan Kalyan Chillakallu	Aws Ai-Ml Virtual Internship	213117102016	B.Sc.	2024-04-15	Completed
6	Hemanth Gokavarapu	Aws Ai-Ml Virtual Internship	213117102021	B.Sc.	2024-04-15	Completed
7	Suneetha Chintala	Aws Data Engineering Virtual Internship	213117102060	B.Sc.	2024-03-27	Completed
8	Namratha Kudaka	Aws Ai-Ml Virtual Internship	213117121268	B.Sc.	2024-04-15	Completed
9	Koppineedi V M Siddardha	Aws Data Engineering Virtual Internship	213117137197	B.Sc.	2024-03-31	Completed
10	Vasa Durga Naga Sai	Aws Data Engineering Virtual Internship	213117137296	B.Sc.	2024-03-28	Completed
11	Bandaru Subhash	Aws Data Engineering Virtual Internship	213117137306	B.Sc.	2024-03-27	Completed
12	Chilaka Surya Praveen	Aws Data Engineering Virtual Internship	213117137312	B.Sc.	2024-03-27	Completed
13	Chinnaparapu Manoj	Aws Data Engineering Virtual Internship	213117137313	B.Sc.	2024-03-28	Completed
14	Teja Sai	Aws Data Engineering Virtual Internship	213117137322	B.Sc.	2024-03-27	Completed
15	Donthala Venkata Ramana	Aws Data Engineering Virtual Internship	213117137323	B.Sc.	2024-03-27	Completed

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16	Galidevara Manikanta	Aws Data Engineering Virtual Internship	213117137328	B.Sc.	2024-03-27	Completed
17	Chandini Gubbala	Aws Data Engineering Virtual Internship	213117137335	B.Sc.	2024-03-28	Completed
18	Kiran Kopparthi	Aws Data Engineering Virtual Internship	213117137362	B.Sc.	2024-03-27	Completed
19	Pallem Chinna Abraham	Google Ai-Ml Virtual Internship	213117137378	B.Sc.	2024-03-30	Completed
20	Uddisi Naga Sai Mahesh Ayyappa	Aws Data Engineering Virtual Internship	213117137401	B.Sc.	2024-03-27	Completed
21	Gogulamanda Swanthana	Aws Ai-Ml Virtual Internship	213117141420	B.Sc.	2024-04-15	Completed
22	Thammireddy Vasavi Priya	Aws Data Engineering Virtual Internship	213117141452	B.Sc.	2024-03-28	Completed
23	Antharvedi Deekshika	Aws Data Engineering Virtual Internship	213117101003	B.Sc.	2024-03-28	Completed
24	Bangaru Yedukondala Ganesh	Aws Data Engineering Virtual Internship	213117101004	B.Sc.	2024-03-30	Completed
25	Baswani Hema Durga Balaji	Aws Data Engineering Virtual Internship	213117101005	B.Sc.	2024-03-28	Completed
26	Bikkavolu Naga Manikanta	Aws Data Engineering Virtual Internship	213117101006	B.Sc.	2024-03-28	Completed
27	Bobbara Jaya Sri	Aws Data Engineering Virtual Internship	213117101007	B.Sc.	2024-03-30	Completed
28	Ganesh Bobbili	Aws Data Engineering Virtual Internship	213117101008	B.Sc.	2024-03-28	Completed
29	Boina Deevena Kumari	Aws Data Engineering Virtual Internship	213117101009	B.Sc.	2024-03-27	Completed
30	Dasari Dhana Babu	Aws Data Engineering Virtual Internship	213117101010	B.Sc.	2024-03-28	Completed
31	Donga Reethu Priya	Aws Data Engineering Virtual Internship	213117101011	B.Sc.	2024-03-27	Completed

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32	Sabbarapu Koteswara Durga Sai Kumar	Aws Data Engineering Virtual Internship	213117101011	B.Sc.	2024-03-29	Completed
33	Gogada Koti Subramanya Sai	Aws Data Engineering Virtual Internship	213117101012	B.Sc.	2024-03-29	Completed
34	Gonaboyina Charishma Devi	Aws Data Engineering Virtual Internship	213117101014	B.Sc.	2024-03-27	Completed
35	Kamani Harika	Aws Data Engineering Virtual Internship	213117101016	B.Sc.	2024-03-26	Completed
36	Karri Shankar	Aws Data Engineering Virtual Internship	213117101017	B.Sc.	2024-03-28	Completed
37	Karri Surya Kala	Aws Data Engineering Virtual Internship	213117101018	B.Sc.	2024-03-27	Completed
38	Katikireddy Hema Sai Prasad	Aws Data Engineering Virtual Internship	213117101019	B.Sc.	2024-03-27	Completed
39	Katta Bala Satya Narayana	Aws Data Engineering Virtual Internship	213117101020	B.Sc.	2024-03-28	Completed
40	Kommuri Manasa Siva Swaroopa	Aws Data Engineering Virtual Internship	213117101021	B.Sc.	2024-03-27	Completed
41	Kota Naga Venkata Sri Indrani	Aws Data Engineering Virtual Internship	213117101022	B.Sc.	2024-03-27	Completed
42	Kudipudi Karthik	Aws Data Engineering Virtual Internship	213117101023	B.Sc.	2024-03-28	Completed
43	Kurakulla Prem Kumar	Aws Data Engineering Virtual Internship	213117101024	B.Sc.	2024-03-30	Completed
44	Kurella Gowtham Babji	Aws Data Engineering Virtual Internship	213117101025	B.Sc.	2024-03-28	Completed
45	Mandapati Kalyan	Aws Data Engineering Virtual Internship	213117101026	B.Sc.	2024-03-28	Completed
46	Mutyam Sindhura	Aws Data Engineering Virtual Internship	213117101027	B.Sc.	2024-03-27	Completed
47	Nallamatti Sai Manikanta	Aws Data Engineering Virtual Internship	213117101028	B.Sc.	2024-03-29	Completed

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48	Nallamatti Siva Sai Durga	Aws Data Engineering Virtual Internship	213117101029	B.Sc.	2024-03-27	Completed
49	Nunna Soma Sekhar	Aws Data Engineering Virtual Internship	213117101030	B.Sc.	2024-03-27	Completed
50	Paserla Chaitanya	Aws Data Engineering Virtual Internship	213117101031	B.Sc.	2024-03-28	Completed
51	Pentakoti Leela Siva Rama Prasad	Aws Data Engineering Virtual Internship	213117101032	B.Sc.	2024-03-29	Completed
52	Pepakayala Uday Pavan	Aws Data Engineering Virtual Internship	213117101033	B.Sc.	2024-03-27	Completed
53	Pervali Phaneendra Bhargava	Aws Data Engineering Virtual Internship	213117101035	B.Sc.	2024-03-30	Completed
54	Pippara Charan	Aws Data Engineering Virtual Internship	213117101036	B.Sc.	2024-03-28	Completed
55	Rudraraju Bhavani Subrahmanyavarma	Google Ai-Ml Virtual Internship	213117101037	B.Sc.	2024-04-18	Completed
56	Rudraraju Bhavani Subrahmanyavarma	Aws Data Engineering Virtual Internship	213117101037	B.Sc.	2024-03-28	Completed
57	Somaraju Rishith Om	Aws Data Engineering Virtual Internship	213117101039	B.Sc.	2024-03-28	Completed
58	Thota Durga Surya Narayana	Aws Data Engineering Virtual Internship	213117101040	B.Sc.	2024-03-27	Completed
59	Tirumani Bala Prasanna	Aws Data Engineering Virtual Internship	213117101041	B.Sc.	2024-03-27	Completed
60	Ura Krupa Mani	Aws Data Engineering Virtual Internship	213117101042	B.Sc.	2024-03-27	Completed
61	Varadi Sundari Kumari	Aws Data Engineering Virtual Internship	213117101043	B.Sc.	2024-03-26	Completed
62	Varre Kavya	Aws Data Engineering Virtual Internship	213117101044	B.Sc.	2024-03-27	Completed
63	Yerramsetti R P N Siva Sai Subba Rao	Aws Data Engineering Virtual Internship	213117101045	B.Sc.	2024-03-27	Completed

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64	Aavala Vanitha	Aws Data Engineering Virtual Internship	213117102046	B.Sc.	2024-03-26	Completed
65	Addanki Anil	Aws Data Engineering Virtual Internship	213117102047	B.Sc.	2024-03-30	Completed
66	Bhavani Sai Kumari	Aws Data Engineering Virtual Internship	213117102051	B.Sc.	2024-03-27	Completed
67	Balla.J.N.D.R. Surya Kiran	Aws Data Engineering Virtual Internship	213117102052	B.Sc.	2024-03-27	Completed
68	Bhavana Mudunuri	Aws Data Engineering Virtual Internship	213117102053	B.Sc.	2024-03-26	Completed
69	Boddu Bala Lakshmi Prasanna	Aws Data Engineering Virtual Internship	213117102054	B.Sc.	2024-03-26	Completed
70	Bokka Jhansi Mahalakshmi	Aws Data Engineering Virtual Internship	213117102055	B.Sc.	2024-03-27	Completed
71	Bolisetti Sai Bhagya Lakshmi Sri Manasa	Aws Data Engineering Virtual Internship	213117102056	B.Sc.	2024-04-02	Completed
72	Bommidi Dinesh	Aws Data Engineering Virtual Internship	213117102057	B.Sc.	2024-03-27	Completed
73	Challa Reshma Sivani	Aws Data Engineering Virtual Internship	213117102058	B.Sc.	2024-03-26	Completed
74	Chavakula Anand	Aws Data Engineering Virtual Internship	213117102059	B.Sc.	2024-04-03	Completed
75	Chitluri Venkata Tirumalarao	Aws Data Engineering Virtual Internship	213117102061	B.Sc.	2024-04-01	Completed
76	Chittibomma Swathi	Aws Data Engineering Virtual Internship	213117102062	B.Sc.	2024-03-27	Completed
77	Dinesh Ch	Aws Data Engineering Virtual Internship	213117102063	B.Sc.	2024-04-10	Completed
78	Dhanala Mounika	Aws Ai-Ml Virtual Internship	213117102064	B.Sc.	2024-04-15	Completed
79	Lakshmi Pravallika Dokku	Aws Data Engineering Virtual Internship	213117102065	B.Sc.	2024-03-27	Completed

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80	Dolla Satish	Aws Data Engineering Virtual Internship	213117102066	B.Sc.	2024-03-27	Completed
81	Ebba Radhikaphani	Aws Data Engineering Virtual Internship	213117102068	B.Sc.	2024-03-27	Completed
82	Gadam Geetha Mahalakshmi	Aws Data Engineering Virtual Internship	213117102069	B.Sc.	2024-04-16	Completed
83	Gadiraju Mani Sai Lakshmi Parvathi	Aws Data Engineering Virtual Internship	213117102070	B.Sc.	2024-04-01	Completed
84	Ganta Durga Dhaarani	Aws Data Engineering Virtual Internship	213117102071	B.Sc.	2024-03-27	Completed
85	Indhu Ganta	Aws Data Engineering Virtual Internship	213117102072	B.Sc.	2024-03-27	Completed
86	Tejaswini Gottumukkala	Aws Data Engineering Virtual Internship	213117102073	B.Sc.	2024-03-27	Completed
87	Anusha Gowri	Aws Data Engineering Virtual Internship	213117102074	B.Sc.	2024-03-27	Completed
88	Gudapati Vanaja	Aws Data Engineering Virtual Internship	213117102075	B.Sc.	2024-03-28	Completed
89	Sai Gudla	Aws Data Engineering Virtual Internship	213117102076	B.Sc.	2024-04-04	Completed
90	Gunturi Mani Meghana Devi Sri	Aws Data Engineering Virtual Internship	213117102077	B.Sc.	2024-03-30	Completed
91	Sravya Jakkamsetti	Aws Data Engineering Virtual Internship	213117102078	B.Sc.	2024-03-30	Completed
92	Jalasutram Hari Narasimha	Aws Data Engineering Virtual Internship	213117102079	B.Sc.	2024-04-03	Completed
93	Javvadi Raghuram	Aws Data Engineering Virtual Internship	213117102080	B.Sc.	2024-03-27	Completed
94	Juttiga Sriram	Aws Data Engineering Virtual Internship	213117102081	B.Sc.	2024-04-11	Completed
95	Juttiga Pavan Sai Kumar	Aws Data Engineering Virtual Internship	213117102082	B.Sc.	2024-04-03	Completed

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96	Kala Ganesh Kumar	Aws Data Engineering Virtual Internship	213117102083	B.Sc.	2024-04-04	Completed
97	Kalidindi Lakshmi Saranya	Aws Data Engineering Virtual Internship	213117102084	B.Sc.	2024-03-30	Completed
98	Jhansi Rani	Aws Data Engineering Virtual Internship	213117102085	B.Sc.	2024-04-02	Completed
99	Kandula Shanmuk	Aws Data Engineering Virtual Internship	213117102086	B.Sc.	2024-03-28	Completed
100	Chandra Sai Reddy	Aws Data Engineering Virtual Internship	213117102087	B.Sc.	2024-03-27	Completed
101	Katari Umesh Chandra	Aws Data Engineering Virtual Internship	213117102088	B.Sc.	2024-04-02	Completed
102	Pranathi Kola	Aws Data Engineering Virtual Internship	213117102089	B.Sc.	2024-03-27	Completed
103	Kollepara Eswar Sri Venkata Kumar	Aws Data Engineering Virtual Internship	213117102090	B.Sc.	2024-04-01	Completed
104	Kolli Yesu Suresh Babu	Aws Data Engineering Virtual Internship	213117102091	B.Sc.	2024-03-23	Completed
105	Gayathri Kommoju	Aws Data Engineering Virtual Internship	213117102092	B.Sc.	2024-03-27	Completed
106	Kothuri Gayathri Naga Mani	Aws Data Engineering Virtual Internship	213117102093	B.Sc.	2024-04-12	Completed
107	Kottapalli Ravi Teja	Aws Data Engineering Virtual Internship	213117102094	B.Sc.	2024-03-30	Completed
108	Kukkala Venkata Chaitanya	Aws Data Engineering Virtual Internship	213117102095	B.Sc.	2024-03-27	Completed
109	Kunapareddy Bhavana	Aws Data Engineering Virtual Internship	213117102096	B.Sc.	2024-03-27	Completed
110	Kunapareddy Bhuvana	Aws Data Engineering Virtual Internship	213117102097	B.Sc.	2024-03-27	Completed
111	Jaya Surya Seshu Kumar Lakkoju	Aws Data Engineering Virtual Internship	213117102098	B.Sc.	2024-04-02	Completed

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112	Lankapalli Ravi Kumar	Aws Data Engineering Virtual Internship	213117102099	B.Sc.	2024-03-27	Completed
113	Magham Venkata Navya Sri	Aws Data Engineering Virtual Internship	213117102100	B.Sc.	2024-04-01	Completed
114	Mallula Aparna	Aws Data Engineering Virtual Internship	213117102101	B.Sc.	2024-04-02	Completed
115	Mantena Hima Keerthi Lohitha	Aws Data Engineering Virtual Internship	213117102102	B.Sc.	2024-03-30	Completed
116	Meegada Leela Naga Sowjanya	Aws Data Engineering Virtual Internship	213117102103	B.Sc.	2024-03-30	Completed
117	Badiuddin Mohammad	Aws Data Engineering Virtual Internship	213117102104	B.Sc.	2024-03-23	Completed
118	Srivalli Monduri	Aws Data Engineering Virtual Internship	213117102105	B.Sc.	2024-03-30	Completed
119	Mulagapati Keerthi Sree	Aws Data Engineering Virtual Internship	213117102106	B.Sc.	2024-03-27	Completed
120	Mylavarapu Bhanu	Aws Data Engineering Virtual Internship	213117102107	B.Sc.	2024-04-09	Completed
121	Nadiminti Pushpa Naga Lakshmi Manasa	Aws Data Engineering Virtual Internship	213117102108	B.Sc.	2024-03-30	Completed
122	Divija Paluri	Aws Data Engineering Virtual Internship	213117102110	B.Sc.	2024-03-27	Completed
123	Paudel James	Aws Data Engineering Virtual Internship	213117102111	B.Sc.	2024-04-02	Completed
124	Pechetti Jayasri	Aws Data Engineering Virtual Internship	213117102112	B.Sc.	2024-04-02	Completed
125	Krishna Mohan Peddinti	Aws Data Engineering Virtual Internship	213117102113	B.Sc.	2024-04-01	Completed
126	Tirumani Shanmukhasai	Aws Data Engineering Virtual Internship	213117102113	B.Sc.	2024-03-27	Completed
127	Penmatsa Hyndavi	Aws Data Engineering Virtual Internship	213117102114	B.Sc.	2024-03-30	Completed

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128	Rajanala Hema Gowri	Aws Data Engineering Virtual Internship	213117102116	B.Sc.	2024-04-01	Completed
129	Chaitu Ramba	Aws Data Engineering Virtual Internship	213117102117	B.Sc.	2024-04-02	Completed
130	Ravula Venkata Lakshmi Deepika	Aws Data Engineering Virtual Internship	213117102118	B.Sc.	2024-03-27	Completed
131	Vasanthi Rudraraju	Aws Data Engineering Virtual Internship	213117102119	B.Sc.	2024-03-30	Completed
132	Sabbithi Sunny	Aws Data Engineering Virtual Internship	213117102120	B.Sc.	2024-04-03	Completed
133	Saidani Durgalakshmi	Aws Data Engineering Virtual Internship	213117102121	B.Sc.	2024-03-28	Completed
134	Jaya Saidu	Aws Data Engineering Virtual Internship	213117102122	B.Sc.	2024-03-27	Completed
135	Shivani Salipalli	Aws Data Engineering Virtual Internship	213117102123	B.Sc.	2024-04-16	Completed
136	Sannamandra Prasanna	Aws Data Engineering Virtual Internship	213117102124	B.Sc.	2024-04-02	Completed
137	Naga Satya Mohana Sattineni	Aws Data Engineering Virtual Internship	213117102125	B.Sc.	2024-03-27	Completed
138	Seelam Sravanthi	Aws Data Engineering Virtual Internship	213117102126	B.Sc.	2024-03-30	Completed
139	Seemakurthi Aasritha Lakshmi	Aws Data Engineering Virtual Internship	213117102127	B.Sc.	2024-04-02	Completed
140	Shaik Shilar Beebi	Aws Data Engineering Virtual Internship	213117102128	B.Sc.	2024-04-01	Completed
141	Tadi Mahimajyothi	Aws Data Engineering Virtual Internship	213117102129	B.Sc.	2024-03-27	Completed
142	Tammu Jhansi Rani	Aws Data Engineering Virtual Internship	213117102131	B.Sc.	2024-04-01	Completed
143	Tangella Bhavani	Aws Data Engineering Virtual Internship	213117102132	B.Sc.	2024-03-27	Completed

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144	Thota Geetha Durga Harani	Aws Data Engineering Virtual Internship	213117102134	B.Sc.	2024-03-28	Completed
145	Tirumalasetti Tinoj Siva Sai Manikanta	Aws Data Engineering Virtual Internship	213117102135	B.Sc.	2024-04-10	Completed
146	Tirumalasetty Tanuj Kumar	Aws Data Engineering Virtual Internship	213117102136	B.Sc.	2024-04-02	Completed
147	Uppada Lakshmi	Aws Data Engineering Virtual Internship	213117102137	B.Sc.	2024-03-27	Completed
148	Manojchand Usala	Aws Data Engineering Virtual Internship	213117102138	B.Sc.	2024-04-01	Completed
149	Naga Venkata Durga Nikhil Uta	Aws Data Engineering Virtual Internship	213117102139	B.Sc.	2024-03-30	Completed
150	Tarun Vaddi	Aws Data Engineering Virtual Internship	213117102140	B.Sc.	2024-03-27	Completed
151	Velpuri Sai Hemanth	Aws Data Engineering Virtual Internship	213117102142	B.Sc.	2024-04-02	Completed
152	Durga Sowjanya Vendra	Aws Data Engineering Virtual Internship	213117102143	B.Sc.	2024-04-02	Completed
153	Vendra Pavani	Aws Data Engineering Virtual Internship	213117102144	B.Sc.	2024-04-03	Completed
154	Annappa Yalamanchili	Aws Data Engineering Virtual Internship	213117102145	B.Sc.	2024-04-01	Completed
155	Yarlagadda Tanusri	Aws Ai-Ml Virtual Internship	213117102146	B.Sc.	2024-04-15	Completed
156	Yeluri Lakshmi Prasanna	Aws Data Engineering Virtual Internship	213117102147	B.Sc.	2024-03-27	Completed
157	Komati Mohan Sai Durgesh	Aws Data Engineering Virtual Internship	213117102195	B.Sc.	2024-03-30	Completed
158	Ainapudi Sravani	Aws Ai-Ml Virtual Internship	213117109148	B.Sc.	2024-04-15	Completed
159	Alamuri H.N.S.Sri.Lakshmi	Aws Data Engineering Virtual Internship	213117109149	B.Sc.	2024-03-30	Completed

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160	Alluri Nyna Harshitha	Aws Data Engineering Virtual Internship	213117109150	B.Sc.	2024-04-03	Completed
161	Ananthapalli Bindesh Sai	Aws Data Engineering Virtual Internship	213117109151	B.Sc.	2024-03-27	Completed
162	Annam Mrudula	Aws Data Engineering Virtual Internship	213117109152	B.Sc.	2024-04-01	Completed
163	Ayitha Venkata Naga Sai Dwaraka Srinivas	Aws Data Engineering Virtual Internship	213117109153	B.Sc.	2024-04-01	Completed
164	Bellapu Durga Sushma Sravani	Aws Ai-Ml Virtual Internship	213117109155	B.Sc.	2024-04-15	Completed
165	Bhupathiraju Chaya Sushma Sri	Aws Data Engineering Virtual Internship	213117109156	B.Sc.	2024-03-27	Completed
166	Bhupathiraju Venkata Krishnamraju	Aws Data Engineering Virtual Internship	213117109157	B.Sc.	2024-03-27	Completed
167	Bonthu Naga Sri Sai Mahesh	Aws Data Engineering Virtual Internship	213117109158	B.Sc.	2024-03-30	Completed
168	Botta Gowri Pushpa Latha	Aws Data Engineering Virtual Internship	213117109159	B.Sc.	2024-03-28	Completed
169	Jayavardhan Buridi	Aws Data Engineering Virtual Internship	213117109160	B.Sc.	2024-03-30	Completed
170	Channamsetti V Bhaskara Satyanarayana	Aws Data Engineering Virtual Internship	213117109161	B.Sc.	2024-03-30	Completed
171	Chebrolu Kasi Naga Basavayya	Aws Ai-Ml Virtual Internship	213117109162	B.Sc.	2024-04-15	Completed
172	Cheeday Harika Durga	Aws Data Engineering Virtual Internship	213117109163	B.Sc.	2024-03-28	Completed
173	Meghana Trishi	Aws Data Engineering Virtual Internship	213117109164	B.Sc.	2024-04-01	Completed
174	Rupasree Chilaparasetti	Aws Data Engineering Virtual Internship	213117109165	B.Sc.	2024-03-29	Completed
175	Chinta Omkar Prasad	Aws Data Engineering Virtual Internship	213117109166	B.Sc.	2024-03-29	Completed
176	Chintala G S S Alekhya	Aws Data Engineering Virtual Internship	213117109167	B.Sc.	2024-03-30	Completed

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177	Chintalapati Sai Sruthi	Aws Data Engineering Virtual Internship	213117109168	B.Sc.	2024-03-27	Completed
178	Chintapalli Rohith Kumar Narasimha	Aws Data Engineering Virtual Internship	213117109169	B.Sc.	2024-03-27	Completed
179	Chitikela Amrutha Phani Sai Eswari	Aws Data Engineering Virtual Internship	213117109170	B.Sc.	2024-03-27	Completed
180	Chitturi Sai Sri Poojitha	Aws Data Engineering Virtual Internship	213117109171	B.Sc.	2024-03-30	Completed
181	Dammuluri Gnana Prasanna	Aws Data Engineering Virtual Internship	213117109172	B.Sc.	2024-03-30	Completed
182	Ushasree Dandu	Aws Data Engineering Virtual Internship	213117109173	B.Sc.	2024-03-27	Completed
183	Dudaboina Sai Prasanthi	Aws Data Engineering Virtual Internship	213117109174	B.Sc.	2024-03-30	Completed
184	Elubandi Bindu Sai Sri Priya	Aws Data Engineering Virtual Internship	213117109175	B.Sc.	2024-03-29	Completed
185	Gadi Harsha	Aws Data Engineering Virtual Internship	213117109176	B.Sc.	2024-04-19	Completed
186	Gadiraju Chandra Swarupa	Aws Data Engineering Virtual Internship	213117109177	B.Sc.	2024-03-27	Completed
187	Ganta Revanth Sree	Aws Ai-Ml Virtual Internship	213117109180	B.Sc.	2024-04-15	Completed
188	Godi Omi Sarvagnya	Aws Data Engineering Virtual Internship	213117109182	B.Sc.	2024-03-30	Completed
189	Gorriparthi Bindu Priya	Aws Data Engineering Virtual Internship	213117109183	B.Sc.	2024-03-27	Completed
190	Guraja Yaswanth Ganesh	Aws Data Engineering Virtual Internship	213117109184	B.Sc.	2024-03-27	Completed
191	Dhanush Sai Kadali	Aws Data Engineering Virtual Internship	213117109185	B.Sc.	2024-04-02	Completed
192	Hemalatha Kalidindi	Aws Data Engineering Virtual Internship	213117109186	B.Sc.	2024-03-28	Completed

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193	Kanumuru Veerendra Kiran Varma	Aws Data Engineering Virtual Internship	213117109187	B.Sc.	2024-03-30	Completed
194	Karinki Sravani	Aws Data Engineering Virtual Internship	213117109188	B.Sc.	2024-03-28	Completed
195	Karuturi Varshini	Aws Data Engineering Virtual Internship	213117109189	B.Sc.	2024-03-28	Completed
196	Jeevan Kumar Katari	Aws Data Engineering Virtual Internship	213117109190	B.Sc.	2024-03-29	Completed
197	Katta Siva Sandeep	Aws Data Engineering Virtual Internship	213117109191	B.Sc.	2024-04-03	Completed
198	Divya Jyothi Ketha	Aws Data Engineering Virtual Internship	213117109192	B.Sc.	2024-03-28	Completed
199	Yasaswini Killampalli	Aws Data Engineering Virtual Internship	213117109193	B.Sc.	2024-04-03	Completed
200	Kishore Battula	Aws Data Engineering Virtual Internship	213117109194	B.Sc.	2024-04-02	Completed
201	Koppada Vinay Venkata Aditya	Aws Data Engineering Virtual Internship	213117109196	B.Sc.	2024-03-29	Completed
202	Prasanthi Korasikha	Aws Data Engineering Virtual Internship	213117109199	B.Sc.	2024-03-30	Completed
203	Kukkala Lavanya	Aws Data Engineering Virtual Internship	213117109200	B.Sc.	2024-03-30	Completed
204	Kuppala Devaki Krishnaveni	Aws Data Engineering Virtual Internship	213117109201	B.Sc.	2024-03-30	Completed
205	Lokanti Ramya Sri	Aws Data Engineering Virtual Internship	213117109202	B.Sc.	2024-03-30	Completed
206	Maddala K N Venkata Sri Ranganayakulu	Aws Data Engineering Virtual Internship	213117109203	B.Sc.	2024-04-02	Completed
207	M V S P Manasa .	Aws Data Engineering Virtual Internship	213117109204	B.Sc.	2024-03-30	Completed
208	Tulasi Devi Mantena	Aws Data Engineering Virtual Internship	213117109205	B.Sc.	2024-03-27	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
209	Meela Indra Kumar	Aws Data Engineering Virtual Internship	213117109206	B.Sc.	2024-03-30	Completed
210	Raziya Sultana Mohammad	Aws Data Engineering Virtual Internship	213117109208	B.Sc.	2024-03-30	Completed
211	Naga Sai Mudde	Aws Data Engineering Virtual Internship	213117109210	B.Sc.	2024-03-30	Completed
212	Nakka Venkat	Aws Data Engineering Virtual Internship	213117109211	B.Sc.	2024-04-01	Completed
213	Padamata Sravani	Aws Data Engineering Virtual Internship	213117109213	B.Sc.	2024-03-30	Completed
214	Pala Deva Ganesh	Aws Data Engineering Virtual Internship	213117109214	B.Sc.	2024-03-27	Completed
215	Pamideti Tulasi Lakshmi Naga Durga	Aws Data Engineering Virtual Internship	213117109215	B.Sc.	2024-03-30	Completed
216	Panuganti Sahithi	Aws Cloud Virtual Internship	213117109216	B.Sc.	2024-04-11	Completed
217	Parimi Akshitha	Aws Data Engineering Virtual Internship	213117109217	B.Sc.	2024-03-30	Completed
218	Penmethsa Aswitha	Aws Data Engineering Virtual Internship	213117109218	B.Sc.	2024-04-01	Completed
219	Penmetsa Shushitha Sri	Aws Data Engineering Virtual Internship	213117109219	B.Sc.	2024-03-28	Completed
220	Pilli Shanmukha Kumar	Aws Data Engineering Virtual Internship	213117109220	B.Sc.	2024-03-30	Completed
221	Poojitha Kakarla	Aws Data Engineering Virtual Internship	213117109221	B.Sc.	2024-03-30	Completed
222	Hari Kiran Mutyam Punnani	Aws Data Engineering Virtual Internship	213117109222	B.Sc.	2024-03-27	Completed
223	Yasaswi Nagadurga Kasivisalakshi Rayaprolu	Aws Data Engineering Virtual Internship	213117109223	B.Sc.	2024-03-30	Completed
224	Radha Gayathri Sagi	Aws Data Engineering Virtual Internship	213117109224	B.Sc.	2024-03-30	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
225	Bhavya Sagiraju	Aws Data Engineering Virtual Internship	213117109225	B.Sc.	2024-03-30	Completed
226	Jyothi Sanku	Aws Data Engineering Virtual Internship	213117109226	B.Sc.	2024-03-30	Completed
227	Shaik Saphiya	Aws Data Engineering Virtual Internship	213117109227	B.Sc.	2024-03-30	Completed
228	Sirigineedi Naga Phanindra	Aws Data Engineering Virtual Internship	213117109229	B.Sc.	2024-03-28	Completed
229	Srinivasula Sai Venkata Sri Vaishnavi	Aws Data Engineering Virtual Internship	213117109230	B.Sc.	2024-03-31	Completed
230	Sirisha Taragalla	Aws Data Engineering Virtual Internship	213117109231	B.Sc.	2024-04-01	Completed
231	Thambabattula Pravallika	Aws Data Engineering Virtual Internship	213117109232	B.Sc.	2024-03-30	Completed
232	Totdharamudi Chaitanya Ajay	Aws Data Engineering Virtual Internship	213117109234	B.Sc.	2024-04-15	Completed
233	Sravani Satya Sree Tumu	Aws Data Engineering Virtual Internship	213117109235	B.Sc.	2024-03-30	Completed
234	Tupuri Tejaswi	Aws Data Engineering Virtual Internship	213117109236	B.Sc.	2024-03-30	Completed
235	Vadlamudi Madhu	Aws Data Engineering Virtual Internship	213117109237	B.Sc.	2024-03-31	Completed
236	Vanka Yathik	Aws Data Engineering Virtual Internship	213117109238	B.Sc.	2024-03-30	Completed
237	Sharonkumar Vantabattina	Aws Data Engineering Virtual Internship	213117109239	B.Sc.	2024-03-28	Completed
238	Vardhanapu Richard Thomas	Aws Data Engineering Virtual Internship	213117109240	B.Sc.	2024-03-30	Completed
239	Vari Guna Vardhan	Aws Data Engineering Virtual Internship	213117109241	B.Sc.	2024-03-28	Completed
240	Vedangi Jayanth Satya Sai Srinivas	Aws Data Engineering Virtual Internship	213117109243	B.Sc.	2024-03-27	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
241	Vegesna Hemanjali	Aws Data Engineering Virtual Internship	213117109244	B.Sc.	2024-03-30	Completed
242	Vegesna Sivaji Raju	Aws Data Engineering Virtual Internship	213117109245	B.Sc.	2024-03-27	Completed
243	Kusuma Zacharaiah	Aws Data Engineering Virtual Internship	213117109246	B.Sc.	2024-03-30	Completed
244	Taraka Sannidi	Aws Data Engineering Virtual Internship	213117109459	B.Sc.	2024-03-30	Completed
245	Venkata Sri Koushitha Ayinampudi	Aws Ai-Ml Virtual Internship	213117121247	B.Sc.	2024-04-15	Completed
246	Jayasree Bolem	Aws Cloud Virtual Internship	213117121248	B.Sc.	2024-03-30	Completed
247	Sai Manikanta	Aws Ai-Ml Virtual Internship	213117121249	B.Sc.	2024-04-15	Completed
248	Boyina Tarun Shekhar	Aws Ai-Ml Virtual Internship	213117121251	B.Sc.	2024-04-15	Completed
249	Rajesh Varma	Aws Ai-Ml Virtual Internship	213117121252	B.Sc.	2024-04-15	Completed
250	Dasari Ambika	Aws Ai-Ml Virtual Internship	213117121253	B.Sc.	2024-04-15	Completed
251	Davala Renuka	Aws Ai-Ml Virtual Internship	213117121254	B.Sc.	2024-04-15	Completed
252	Gandaboina Jahnavi	Aws Ai-Ml Virtual Internship	213117121255	B.Sc.	2024-04-15	Completed
253	Gollamandala Riya Florence	Aws Ai-Ml Virtual Internship	213117121258	B.Sc.	2024-04-15	Completed
254	Nanditha Gutam	Aws Ai-Ml Virtual Internship	213117121259	B.Sc.	2024-04-15	Completed
255	Siva Kumar Kancharlapalli	Aws Ai-Ml Virtual Internship	213117121262	B.Sc.	2024-04-15	Completed
256	Kandulapati Amrutha Sri Naga Sai Charani	Aws Ai-Ml Virtual Internship	213117121263	B.Sc.	2024-04-15	Completed
257	Kankatala Veera Lakshmi Vyshnavi	Aws Ai-Ml Virtual Internship	213117121264	B.Sc.	2024-04-15	Completed
258	Kontheti Supriya	Aws Ai-Ml Virtual Internship	213117121265	B.Sc.	2024-04-15	Completed
259	Korukonda Ramyasaisri	Aws Ai-Ml Virtual Internship	213117121266	B.Sc.	2024-04-15	Completed
260	Sushma Koyye	Aws Ai-Ml Virtual Internship	213117121267	B.Sc.	2024-04-15	Completed
261	Lakshmi Priya Madabhushi	Aws Ai-Ml Virtual Internship	213117121269	B.Sc.	2024-04-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
262	Machha Eswar	Aws Ai-Ml Virtual Internship	213117121270	B.Sc.	2024-04-15	Completed
263	Venky Mangipudi	Aws Ai-Ml Virtual Internship	213117121271	B.Sc.	2024-04-15	Completed
264	Mohammad Uzma Gousia Affrin	Aws Ai-Ml Virtual Internship	213117121272	B.Sc.	2024-04-15	Completed
265	Sri Lakshmi Sneha Mulagapati	Aws Ai-Ml Virtual Internship	213117121273	B.Sc.	2024-04-15	Completed
266	Rama Tulasi Mypala	Aws Data Engineering Virtual Internship	213117121274	B.Sc.	2024-03-28	Completed
267	Chopperla Naga Alekhya	Aws Ai-Ml Virtual Internship	213117121275	B.Sc.	2024-04-15	Completed
268	Hepsiba Rani	Google Ai-Ml Virtual Internship	213117121276	B.Sc.	2024-04-15	Completed
269	Divya Namala	Aws Ai-Ml Virtual Internship	213117121277	B.Sc.	2024-04-15	Completed
270	Namana Sarat Sri Suri	Aws Ai-Ml Virtual Internship	213117121278	B.Sc.	2024-04-15	Completed
271	Nunna Manjula	Aws Ai-Ml Virtual Internship	213117121279	B.Sc.	2024-04-15	Completed
272	Pakalapati Asritha	Aws Ai-Ml Virtual Internship	213117121280	B.Sc.	2024-04-15	Completed
273	Anvesh Peethala	Aws Ai-Ml Virtual Internship	213117121281	B.Sc.	2024-04-15	Completed
274	Penmetsa Hema Sai Devi	Aws Ai-Ml Virtual Internship	213117121283	B.Sc.	2024-04-15	Completed
275	Posinasetty Sai Priyanka	Aws Data Engineering Virtual Internship	213117121286	B.Sc.	2024-03-28	Completed
276	Reddy Harshitha Devi	Aws Ai-Ml Virtual Internship	213117121288	B.Sc.	2024-04-15	Completed
277	Devi Deepthi Samineni	Aws Ai-Ml Virtual Internship	213117121289	B.Sc.	2024-04-15	Completed
278	Pujitha Sidagam	Aws Cloud Virtual Internship	213117121290	B.Sc.	2024-04-15	Completed
279	Siddamsetti Keerthana	Aws Ai-Ml Virtual Internship	213117121291	B.Sc.	2024-04-15	Completed
280	Penumala Vijaya Bharathi	Aws Ai-Ml Virtual Internship	213117121291	B.Sc.	2024-04-15	Completed
281	Sai Sri Tadicharla	Aws Ai-Ml Virtual Internship	213117121292	B.Sc.	2024-04-15	Completed
282	Tirumani Divya Sree	Aws Ai-Ml Virtual Internship	213117121293	B.Sc.	2024-04-15	Completed
283	Dhana Lakshmi Sri Harsha Vamisetti	Aws Ai-Ml Virtual Internship	213117121294	B.Sc.	2024-04-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
284	Guna Shekar	Aws Data Engineering Virtual Internship	213117121295	B.Sc.	2024-03-28	Completed
285	Vasa Gopika	Aws Data Engineering Virtual Internship	213117121297	B.Sc.	2024-03-28	Completed
286	Vatsavai Dharma Tejas Varma	Aws Ai-Ml Virtual Internship	213117121298	B.Sc.	2024-04-15	Completed
287	Veeramallu Saraswathi Rao	Aws Ai-Ml Virtual Internship	213117121299	B.Sc.	2024-04-15	Completed
288	Jyotsna Vegesna	Aws Ai-Ml Virtual Internship	213117121300	B.Sc.	2024-04-15	Completed
289	Adabala Mrudhula Satya Sri	Aws Data Engineering Virtual Internship	213117137301	B.Sc.	2024-03-28	Completed
290	Addala Suma Devi	Aws Data Engineering Virtual Internship	213117137302	B.Sc.	2024-03-27	Completed
291	Akula Jaya Suma Gayathri	Aws Data Engineering Virtual Internship	213117137303	B.Sc.	2024-03-28	Completed
292	Bandaru Naga Sai Sravani	Aws Data Engineering Virtual Internship	213117137304	B.Sc.	2024-03-27	Completed
293	Puja Bandaru	Aws Data Engineering Virtual Internship	213117137305	B.Sc.	2024-03-27	Completed
294	Barnala Salman Raju	Aws Data Engineering Virtual Internship	213117137307	B.Sc.	2024-03-28	Completed
295	Karunakar Bonam	Aws Data Engineering Virtual Internship	213117137308	B.Sc.	2024-03-28	Completed
296	Nikitha Chakka	Aws Data Engineering Virtual Internship	213117137309	B.Sc.	2024-03-28	Completed
297	Cheerala Durga Bhavani	Aws Data Engineering Virtual Internship	213117137310	B.Sc.	2024-03-28	Completed
298	Prasanthi Chennu	Aws Data Engineering Virtual Internship	213117137311	B.Sc.	2024-03-28	Completed
299	Chintapalli Hari Krishna	Aws Data Engineering Virtual Internship	213117137314	B.Sc.	2024-03-28	Completed
300	Chodisetty Radha Samhitha	Aws Data Engineering Virtual Internship	213117137315	B.Sc.	2024-03-27	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
301	Daki Jons Melody	Aws Data Engineering Virtual Internship	213117137316	B.Sc.	2024-03-28	Completed
302	Dandu Sreya	Aws Data Engineering Virtual Internship	213117137317	B.Sc.	2024-03-28	Completed
303	Darapureddy Tarun Babu	Aws Data Engineering Virtual Internship	213117137318	B.Sc.	2024-04-15	Completed
304	Dasari Ravi Teja Sri Venkata Shyam	Aws Data Engineering Virtual Internship	213117137319	B.Sc.	2024-03-27	Completed
305	Vasu Sai	Aws Data Engineering Virtual Internship	213117137320	B.Sc.	2024-03-28	Completed
306	Devatha Venkata Sravanthi	Aws Data Engineering Virtual Internship	213117137321	B.Sc.	2024-03-27	Completed
307	Dundi Asish Kumar	Aws Data Engineering Virtual Internship	213117137325	B.Sc.	2024-03-30	Completed
308	Ebba Deva Manikanta	Aws Data Engineering Virtual Internship	213117137326	B.Sc.	2024-03-28	Completed
309	Edi Vijaya Babu	Aws Data Engineering Virtual Internship	213117137327	B.Sc.	2024-03-28	Completed
310	Gandham Hema Chandrika	Aws Data Engineering Virtual Internship	213117137329	B.Sc.	2024-03-27	Completed
311	Gandikota Shanthi Priya	Aws Data Engineering Virtual Internship	213117137330	B.Sc.	2024-03-27	Completed
312	Ganireddy Jagan Kumar	Aws Data Engineering Virtual Internship	213117137331	B.Sc.	2024-03-28	Completed
313	Goketi Venkat Rao	Aws Data Engineering Virtual Internship	213117137333	B.Sc.	2024-03-28	Completed
314	Gonnabattula Amrutha Varshini	Aws Data Engineering Virtual Internship	213117137334	B.Sc.	2024-03-28	Completed
315	Gudivada Hema	Aws Data Engineering Virtual Internship	213117137336	B.Sc.	2024-03-27	Completed
316	Gudla Naga Pavan Sai	Aws Data Engineering Virtual Internship	213117137337	B.Sc.	2024-03-26	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
317	Gunti Kumar Babu	Aws Data Engineering Virtual Internship	213117137338	B.Sc.	2024-03-28	Completed
318	Indukuri Hemitha Phani Sujitha Sri	Aws Data Engineering Virtual Internship	213117137339	B.Sc.	2024-03-27	Completed
319	Durga Bhavani Jalasuthram	Aws Data Engineering Virtual Internship	213117137340	B.Sc.	2024-03-28	Completed
320	Jalem Gargi Priya	Aws Data Engineering Virtual Internship	213117137341	B.Sc.	2024-03-28	Completed
321	Jayamangala Priya Darshini	Aws Data Engineering Virtual Internship	213117137342	B.Sc.	2024-03-28	Completed
322	Jogi Ashok Babu	Aws Data Engineering Virtual Internship	213117137343	B.Sc.	2024-03-29	Completed
323	Joguripati Krishan Kartheek	Aws Data Engineering Virtual Internship	213117137344	B.Sc.	2024-03-30	Completed
324	Mouni Kadali	Aws Data Engineering Virtual Internship	213117137345	B.Sc.	2024-03-28	Completed
325	Kadali Sai Manoj	Aws Data Engineering Virtual Internship	213117137346	B.Sc.	2024-03-30	Completed
326	Kalidindi G V Siva Ramaraju	Aws Data Engineering Virtual Internship	213117137347	B.Sc.	2024-03-27	Completed
327	Kalidindi Naga Sai Surendra Varma	Aws Data Engineering Virtual Internship	213117137348	B.Sc.	2024-03-27	Completed
328	Kantheti Gopi Venkata Swami	Aws Data Engineering Virtual Internship	213117137349	B.Sc.	2024-03-27	Completed
329	K Mounika	Aws Data Engineering Virtual Internship	213117137350	B.Sc.	2024-03-26	Completed
330	Karumujji Kalyan Ram	Aws Data Engineering Virtual Internship	213117137351	B.Sc.	2024-03-28	Completed
331	Katakam Naga Sai Lakshmi Bhavana	Aws Data Engineering Virtual Internship	213117137352	B.Sc.	2024-03-27	Completed
332	Katreddy Chaitanya Durga	Aws Data Engineering Virtual Internship	213117137353	B.Sc.	2024-03-28	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
333	Katreddi Yethendra Swamy	Aws Data Engineering Virtual Internship	213117137354	B.Sc.	2024-03-27	Completed
334	Katta Naga Venkata Satyanarayana	Aws Data Engineering Virtual Internship	213117137355	B.Sc.	2024-03-28	Completed
335	Katta Trisha	Aws Data Engineering Virtual Internship	213117137356	B.Sc.	2024-03-28	Completed
336	Katta Venkata Lokesh	Aws Data Engineering Virtual Internship	213117137357	B.Sc.	2024-03-28	Completed
337	Sukesh Ketha	Aws Data Engineering Virtual Internship	213117137358	B.Sc.	2024-03-28	Completed
338	Kodamanchili Charan Teja	Aws Data Engineering Virtual Internship	213117137359	B.Sc.	2024-03-27	Completed
339	Kolli Ramya	Aws Data Engineering Virtual Internship	213117137360	B.Sc.	2024-03-27	Completed
340	Kommana Shanmukha Sai	Aws Data Engineering Virtual Internship	213117137361	B.Sc.	2024-03-30	Completed
341	Kosuri Namitha Sri	Aws Data Engineering Virtual Internship	213117137363	B.Sc.	2024-03-28	Completed
342	Kothapalli Aryesh	Aws Data Engineering Virtual Internship	213117137364	B.Sc.	2024-03-31	Completed
343	Satyanarayana Koya	Aws Data Engineering Virtual Internship	213117137365	B.Sc.	2024-03-29	Completed
344	Manthena Naga Sruthi Sri	Aws Data Engineering Virtual Internship	213117137366	B.Sc.	2024-03-27	Completed
345	Manupati Rajesh	Aws Data Engineering Virtual Internship	213117137367	B.Sc.	2024-03-27	Completed
346	Moganti Saivyshnavi	Aws Data Engineering Virtual Internship	213117137368	B.Sc.	2024-03-28	Completed
347	Mohamad Anass	Aws Data Engineering Virtual Internship	213117137369	B.Sc.	2024-03-27	Completed
348	Jyothika Murapala	Aws Data Engineering Virtual Internship	213117137370	B.Sc.	2024-03-27	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
349	Nagaraju Bharath Kumar Varma	Aws Data Engineering Virtual Internship	213117137372	B.Sc.	2024-03-27	Completed
350	Caleb Nakka	Aws Data Engineering Virtual Internship	213117137373	B.Sc.	2024-03-28	Completed
351	Nandamuri Praveen Kumar	Aws Data Engineering Virtual Internship	213117137374	B.Sc.	2024-03-29	Completed
352	Neelapu Satya Prakash	Aws Data Engineering Virtual Internship	213117137375	B.Sc.	2024-03-29	Completed
353	Pyla Monali	Aws Data Engineering Virtual Internship	213117137377	B.Sc.	2024-03-29	Completed
354	Pechetti Bhanu Sai Sree	Aws Data Engineering Virtual Internship	213117137379	B.Sc.	2024-03-27	Completed
355	Sreeja Pedamallu	Aws Data Engineering Virtual Internship	213117137380	B.Sc.	2024-04-19	Completed
356	Pedapudi Nandini	Aws Data Engineering Virtual Internship	213117137381	B.Sc.	2024-03-29	Completed
357	Penmetsa Jeeshitha	Aws Data Engineering Virtual Internship	213117137382	B.Sc.	2024-03-27	Completed
358	Penmetsa Phani Sai Ramana Varma	Aws Data Engineering Virtual Internship	213117137383	B.Sc.	2024-03-27	Completed
359	Pichikala Harsha Nandini	Aws Data Engineering Virtual Internship	213117137384	B.Sc.	2024-03-29	Completed
360	Potnuri Mounika	Aws Data Engineering Virtual Internship	213117137385	B.Sc.	2024-03-27	Completed
361	Raagu Devi Navya Sri	Aws Data Engineering Virtual Internship	213117137387	B.Sc.	2024-03-27	Completed
362	Rompicherla Sai Bhavani	Aws Data Engineering Virtual Internship	213117137388	B.Sc.	2024-03-29	Completed
363	Rudraraju Madhu Nisha	Aws Data Engineering Virtual Internship	213117137389	B.Sc.	2024-03-29	Completed
364	Sanaboyina Thanu Sri	Aws Data Engineering Virtual Internship	213117137390	B.Sc.	2024-03-28	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
365	Shaik Shoaib Ali	Aws Data Engineering Virtual Internship	213117137392	B.Sc.	2024-03-27	Completed
366	Sheik Shabeena	Aws Data Engineering Virtual Internship	213117137393	B.Sc.	2024-03-27	Completed
367	Tamma Koti Yasaswi	Aws Data Engineering Virtual Internship	213117137394	B.Sc.	2024-03-27	Completed
368	Tammu Sai	Aws Data Engineering Virtual Internship	213117137395	B.Sc.	2024-03-28	Completed
369	Thota Bhuvana Naga Lakshmi Durga	Aws Data Engineering Virtual Internship	213117137396	B.Sc.	2024-03-29	Completed
370	Thota Naga Bhargavi	Aws Data Engineering Virtual Internship	213117137397	B.Sc.	2024-03-27	Completed
371	Thota Ravi Shankar Naidu	Aws Data Engineering Virtual Internship	213117137398	B.Sc.	2024-03-29	Completed
372	Thota Swarna Kumari	Aws Data Engineering Virtual Internship	213117137399	B.Sc.	2024-03-29	Completed
373	Udayana Trilochana	Aws Data Engineering Virtual Internship	213117137400	B.Sc.	2024-03-27	Completed
374	Uppalapati Sai Lakshmi	Aws Data Engineering Virtual Internship	213117137402	B.Sc.	2024-03-29	Completed
375	Vegesna Sitaramaraju	Aws Data Engineering Virtual Internship	213117137403	B.Sc.	2024-03-28	Completed
376	Velivela Kiran Veera Venkata Satyanarayana	Aws Data Engineering Virtual Internship	213117137404	B.Sc.	2024-03-29	Completed
377	Vempatapu Madhavi Durga	Aws Data Engineering Virtual Internship	213117137405	B.Sc.	2024-03-29	Completed
378	Venna Pooja Satya Sree Pravalika	Aws Data Engineering Virtual Internship	213117137406	B.Sc.	2024-03-27	Completed
379	Volipilli Gowri Mallika	Aws Data Engineering Virtual Internship	213117137407	B.Sc.	2024-03-27	Completed
380	Adabala Reshma Satya	Aws Ai-Ml Virtual Internship	213117141408	B.Sc.	2024-04-15	Completed

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381	Sowmya Satya Durga Tejaswini Addagalla	Aws Ai-Ml Virtual Internship	213117141409	B.Sc.	2024-04-15	Completed
382	Aravapalli Durga Prasad	Aws Ai-Ml Virtual Internship	213117141411	B.Sc.	2024-04-15	Completed
383	Badeti Purna Kanaka Mahalakshmi	Aws Ai-Ml Virtual Internship	213117141412	B.Sc.	2024-04-15	Completed
384	Nandini Birudugadda	Aws Ai-Ml Virtual Internship	213117141414	B.Sc.	2024-04-15	Completed
385	Charan Datta	Aws Data Engineering Virtual Internship	213117141415	Bsc (Hons)	2024-04-19	Completed
386	Davaleswarapu Likitha Srivalli	Aws Ai-Ml Virtual Internship	213117141417	B.Sc.	2024-04-15	Completed
387	Dogga Lakshmi Harsha Sri Priyanka	Aws Ai-Ml Virtual Internship	213117141418	B.Sc.	2024-04-15	Completed
388	Gogu Sowjanya	Aws Ai-Ml Virtual Internship	213117141419	B.Sc.	2024-04-15	Completed
389	Gopisetti Devi Saranya	Aws Ai-Ml Virtual Internship	213117141422	B.Sc.	2024-04-15	Completed
390	Keerthi Gottumukkala	Aws Ai-Ml Virtual Internship	213117141423	B.Sc.	2024-04-15	Completed
391	Illa Bavya Sri Satya	Aws Ai-Ml Virtual Internship	213117141424	B.Sc.	2024-04-15	Completed
392	Vaishnavi Varma	Aws Ai-Ml Virtual Internship	213117141425	B.Sc.	2024-04-15	Completed
393	Javvadi Anitha Devi	Aws Ai-Ml Virtual Internship	213117141426	B.Sc.	2024-04-15	Completed
394	Kadiyam Veera Venkata Manideep	Aws Ai-Ml Virtual Internship	213117141427	B.Sc.	2024-04-15	Completed
395	Durga Saranya Kannaji	Aws Data Engineering Virtual Internship	213117141428	B.Sc.	2024-03-27	Completed
396	Durga Saranya Kannaji	Aws Ai-Ml Virtual Internship	213117141428	B.Sc.	2024-04-15	Completed
397	Karanam Harsha Deepil	Aws Ai-Ml Virtual Internship	213117141429	B.Sc.	2024-04-15	Completed
398	Ajith Babu Katta	Aws Ai-Ml Virtual Internship	213117141430	B.Sc.	2024-04-15	Completed
399	Kesana Gayathri	Aws Ai-Ml Virtual Internship	213117141431	B.Sc.	2024-04-15	Completed
400	Beulah Kothapalli	Aws Ai-Ml Virtual Internship	213117141432	B.Sc.	2024-04-15	Completed
401	Lingampalli Amitha	Aws Ai-Ml Virtual Internship	213117141434	B.Sc.	2024-04-15	Completed
402	Niharika Mamidi	Aws Ai-Ml Virtual Internship	213117141435	B.Sc.	2024-04-15	Completed
403	Harish Mekala	Aws Ai-Ml Virtual Internship	213117141436	B.Sc.	2024-04-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
404	Miriyala Praveen	Aws Ai-Ml Virtual Internship	213117141437	B.Sc.	2024-04-15	Completed
405	Muddala Yashodharani	Aws Ai-Ml Virtual Internship	213117141438	B.Sc.	2024-04-15	Completed
406	Nagaraju Likhitha	Aws Data Engineering Virtual Internship	213117141440	B.Sc.	2024-03-28	Completed
407	Netala Rajesh	Aws Ai-Ml Virtual Internship	213117141441	B.Sc.	2024-04-15	Completed
408	Bhanu Sailaja Oggu	Aws Ai-Ml Virtual Internship	213117141442	B.Sc.	2024-04-15	Completed
409	Deepika Ogireddy	Aws Ai-Ml Virtual Internship	213117141443	B.Sc.	2024-04-15	Completed
410	Mounika Penmetsa	Aws Ai-Ml Virtual Internship	213117141445	B.Sc.	2024-04-15	Completed
411	Penugonda Mounika	Aws Ai-Ml Virtual Internship	213117141446	B.Sc.	2024-04-15	Completed
412	Peteti Uma Maheswari	Aws Ai-Ml Virtual Internship	213117141447	B.Sc.	2024-04-15	Completed
413	Sravani Potnuri	Aws Ai-Ml Virtual Internship	213117141448	B.Sc.	2024-04-15	Completed
414	Ranga Chinmayi	Aws Ai-Ml Virtual Internship	213117141450	B.Sc.	2024-04-15	Completed
415	Sanku Syamala Sai Prasanna	Aws Ai-Ml Virtual Internship	213117141451	B.Sc.	2024-04-15	Completed
416	Akshara Thota	Aws Ai-Ml Virtual Internship	213117141453	B.Sc.	2024-04-15	Completed
417	Thota Kanaka Durga	Aws Ai-Ml Virtual Internship	213117141454	B.Sc.	2024-04-15	Completed
418	Uppala Sai Lohitha	Aws Ai-Ml Virtual Internship	213117141455	B.Sc.	2024-04-15	Completed
419	Vepada Deepika	Aws Ai-Ml Virtual Internship	213117141456	B.Sc.	2024-04-15	Completed
420	Yarakaraju Himaja	Aws Ai-Ml Virtual Internship	213117141457	B.Sc.	2024-04-15	Completed
421	Yatham.Jhansi Prasanna	Aws Ai-Ml Virtual Internship	213117141458	B.Sc.	2024-04-15	Completed
422	Achanta Madhavi Phani Lalitha Ramyasri	Aws Ai-Ml Virtual Internship	213118200001	Bcom	2024-04-15	Completed
423	Achanta Vinay Kumar	Google Ai-Ml Virtual Internship	213118200002	It	2024-04-26	Completed
424	Bale Bhavani	Aws Ai-Ml Virtual Internship	213118200004	Bcom	2024-04-15	Completed
425	Jitendra Naga Kumar Barre	Aws Cloud Virtual Internship	213118200005	Bcom	2024-03-30	Completed
426	Sandeep Prajwal	Aws Cloud Virtual Internship	213118200007	Bcom	2024-03-28	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
427	Boddu Durga Venkana Sasank	Aws Ai-Ml Virtual Internship	213118200008	Bcom	2024-04-15	Completed
428	Jayanth Cheepu	Aws Ai-Ml Virtual Internship	213118200009	Bcom	2024-04-15	Completed
429	Bharath Balaji Varma Chekuri	Aws Ai-Ml Virtual Internship	213118200010	Bcom	2024-04-15	Completed
430	Chellaboina Sanjay Siva Kumar	Aws Ai-Ml Virtual Internship	213118200011	Bcom	2024-04-15	Completed
431	Chennamsetti Kiran	Aws Cloud Virtual Internship	213118200012	Bcom	2024-03-28	Completed
432	Chintalapati Vamsi Varma	Aws Ai-Ml Virtual Internship	213118200013	Bcom	2024-04-15	Completed
433	Nikhil Chippada	Aws Ai-Ml Virtual Internship	213118200014	Bcom	2024-04-15	Completed
434	Deshpet Nikitha	Aws Cloud Virtual Internship	213118200015	Bcom	2024-03-28	Completed
435	Gadiraju Prudhvi Nikith Varma	Aws Cloud Virtual Internship	213118200016	Bcom	2024-03-30	Completed
436	Ganta Bharath Kumar	Aws Cloud Virtual Internship	213118200017	Bcom	2024-03-30	Completed
437	Gorle Manikanta	Aws Ai-Ml Virtual Internship	213118200019	Bcom	2024-04-15	Completed
438	Jampana H V Sai Rama Koteswara Raju	Aws Cloud Virtual Internship	213118200021	Bcom	2024-04-03	Completed
439	Javvadi Lalitha	Aws Ai-Ml Virtual Internship	213118200022	Bcom	2024-04-15	Completed
440	Lohitha Kadali	Aws Cloud Virtual Internship	213118200023	Bcom	2024-03-28	Completed
441	Kakulapati Naveen	Aws Cloud Virtual Internship	213118200024	Bcom	2024-03-30	Completed
442	Kandulapati Venkata Sai Prasad	Aws Cloud Virtual Internship	213118200025	Bcom	2024-03-30	Completed
443	Kalyan Varma	Aws Ai-Ml Virtual Internship	213118200026	Bcom	2024-04-15	Completed
444	Phani Kasireddy Phani Kasireddy	Aws Cloud Virtual Internship	213118200027	Bcom	2024-03-28	Completed
445	Kondaveti Murali	Aws Ai-Ml Virtual Internship	213118200028	Bcom	2024-04-15	Completed
446	Kondeti Mahalakshmi	Aws Ai-Ml Virtual Internship	213118200029	Bcom	2024-04-15	Completed
447	Kopparthi Sri Harsha	Aws Ai-Ml Virtual Internship	213118200031	Bcom	2024-04-15	Completed
448	Syam Korada	Aws Cloud Virtual Internship	213118200032	Bcom	2024-03-30	Completed
449	Madireddy Praveen Kumar	Aws Cloud Virtual Internship	213118200033	Bcom	2024-04-08	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
450	Manisha Das	Aws Ai-Ml Virtual Internship	213118200034	Bcom	2024-04-15	Completed
451	Medidi Dayana	Aws Cloud Virtual Internship	213118200035	Bcom	2024-03-31	Completed
452	Nadimpalli Nithin Teja	Aws Cloud Virtual Internship	213118200037	Bcom	2024-03-31	Completed
453	Perikala Vikas Chakravathy	Aws Cloud Virtual Internship	213118200039	Bcom	2024-04-02	Completed
454	Harini Periketi	Aws Cloud Virtual Internship	213118200040	Bcom	2024-03-29	Completed
455	Pinnamraju Mohit Varma	Aws Ai-Ml Virtual Internship	213118200041	Bcom	2024-04-15	Completed
456	Moshe Poleti	Aws Cloud Virtual Internship	213118200042	Bcom	2024-03-28	Completed
457	Teja Poreddi	Aws Ai-Ml Virtual Internship	213118200043	Bcom	2024-04-15	Completed
458	Prathipati Naveen Sai Krishna	Aws Ai-Ml Virtual Internship	213118200044	Bcom	2024-04-15	Completed
459	Rayinuthula Sindhu	Aws Cloud Virtual Internship	213118200045	Bcom	2024-03-30	Completed
460	Revuri L N V S S S Tulasi	Aws Ai-Ml Virtual Internship	213118200046	Bcom	2024-04-15	Completed
461	Vijay Kumar Sabbarapu	Aws Ai-Ml Virtual Internship	213118200047	B.Voc	2024-04-15	Completed
462	Saipu Tejaswini	Aws Cloud Virtual Internship	213118200048	Bcom	2024-03-28	Completed
463	Siva Saripalli	Aws Ai-Ml Virtual Internship	213118200050	Bcom	2024-04-15	Completed
464	Sayana Kusuma Sri	Aws Cloud Virtual Internship	213118200051	Bcom	2024-03-28	Completed
465	Seesala Rama Krishna Prasad	Aws Ai-Ml Virtual Internship	213118200052	Bcom	2024-04-15	Completed
466	Shaik Aarifa	Aws Cloud Virtual Internship	213118200053	Bcom	2024-03-28	Completed
467	Nazeer Sheik	Aws Ai-Ml Virtual Internship	213118200054	Bcom	2024-04-15	Completed
468	Talluri Ashish Raj	Aws Ai-Ml Virtual Internship	213118200055	Bcom	2024-04-15	Completed
469	Tanneedi Naga Venkata Pradeep	Aws Cloud Virtual Internship	213118200056	Bcom	2024-03-30	Completed
470	Kaushik Telagamsetti	Aws Ai-Ml Virtual Internship	213118200057	Bcom	2024-04-15	Completed
471	Tummapudi Narendra Balaji	Aws Cloud Virtual Internship	213118200058	Bcom	2024-04-03	Completed
472	Indrani Vatala	Aws Ai-Ml Virtual Internship	213118200059	Bcom	2024-04-15	Completed
473	Jaswanth Varma Vegesna	Aws Ai-Ml Virtual Internship	213118200060	Bcom	2024-04-15	Completed

Sl No	Full Name	Domain	Roll No	Branch	Date At	Status
474	Venkat Vegesna	Aws Cloud Virtual Internship	213118200061	Bcom	2024-03-30	Completed
475	Vempatapu Kanna	Aws Cloud Virtual Internship	213118200062	Bcom	2024-03-30	Completed
476	Yajjala Lavanya Mahima	Aws Cloud Virtual Internship	213118200064	Bcom	2024-04-02	Completed
477	Yeseburaju Yandamuri	Aws Ai-Ml Virtual Internship	213118200065	Bcom	2024-04-15	Completed
478	Chanti Yenugupalli	Aws Ai-Ml Virtual Internship	213118200066	Bcom	2024-04-15	Completed
479	Vinjamuri Kranthi Kumar	Aws Ai-Ml Virtual Internship	213118300063	Bcom	2024-04-15	Completed

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

LONG TERM INTERNSHIP
ON
DATA SCIENCE
VI th SEMISTER

Duration: 3 Months

Timings:

Batch 1: 9.30 – 12.30

Batch 2: 1.30 – 4.30

BRANCE NAME:

B.Sc MECs

B.Sc MPCs

B.Sc MSCs

B.Com

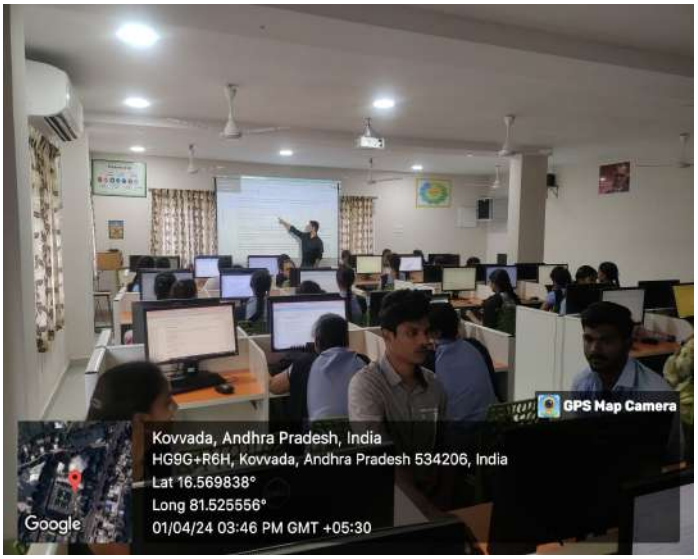
BATCH - 1

SLNO	HALL TICKET	STUDENT NAME	GROUP
1	213117137303	AKULA JAYA SUMA GAYATHRI	MECs-A
2	213117137305	BANDARU PUJA NAGA MOULI	MECs-A
3	213117137308	BONAM KARUNAKAR	MECs-A
4	213117137309	CHAKKA SRI NIKITHA	MECs-A
5	213117137310	CHEERALA DURGA BHAVANI	MECs-A
6	213117137311	CH LAKSHMI PRASANTHI	MECs-A
7	213117137315	CH BHAVANI S R SAMHITHA	MECs-A
8	213117137316	DAKI JONS MELODY	MECs-A
9	213117137317	DANDU SREYA	MECs-A
10	213117137320	D V SATYA SAI MANIKANTA	MECs-A
11	213117137335	GUBBALA CHANDINI	MECs-A
12	213117137337	GUDLA NAGA PAVAN SAI	MECs-A
13	213117137339	I H PHANI SUJITHA SRI	MECs-A
14	213117137348	K N SAI SURENDRA VARMA	MECs-A
15	213117137349	K GOPI VENKATA SWAMI	MECs-A
16	213117137352	K N SAI LAKSHMI BHAVANA	MECs-A
17	213117137353	K CHAITANYA DURGA	MECs-A
18	213117137361	KOMMANA SHANMUKHA SAI	MECs-B
19	213117137372	N BHARATH KUMAR VARMA	MECs-B
20	213117137384	PICHIKALA HARSHA NANDINI	MECs-B
21	213117137392	SHAIK SHOAIB ALI	MECs-B
22	213117137396	T B NAGA LAKSHMI DURGA	MECs-B
23	213117137399	THOTA SWARNA KUMARI	MECs-B
24	213117109155	B DURGA SUSHMA SRAVANI	MSCs-A
25	213117109160	BURIDI JAYA VARDHAN	MSCs-A
26	213117109161	C V B SATYANARAYANA	MSCs-A
27	213117109164	CH MEGHANA TRISHI	MSCs-A
28	213117109166	CHINTA OMKAR PRASAD	MSCs-A
29	213117109167	CHINTALA G S S ALEKHYA	MSCs-A
30	213117109169	CH R KUMAR NARASIMHA	MSCs-A
31	213117109172	D GNANA PRASANNA	MSCs-A
32	213117109173	DANDU USHASREE	MSCs-A
33	213117109174	DUDABOINA SAI PRASANTHI	MSCs-A
34	213117109176	GADI HARSHA VARDHAN	MSCs-A
35	213117109177	G CHANDRA SWARUPA	MSCs-A
36	213117109180	GANTA REVANTH SREE	MSCs-A
37	213117109185	KADALI DHANUSH SAI	MSCs-A
38	213117109188	KARINKI SRAVANI	MSCs-A
39	213117109189	KARUTURI VARSHINI	MSCs-A
40	213117109190	KATARI JEEVAN KUMAR	MSCs-A
41	213117109191	KATTA SIVA SANDEEP	MSCs-A
42	213117109194	KISHORE BATTULA	MSCs-A
43	213117109195	K MOHAN SAI DURGESH	MSCs-A
44	213117109219	PENMETSA SUSHITHA SRI	MSCs-B
45	213117109230	S S V SRI VAISHNAVI	MSCs-B
46	213117109232	T PRAVALLIKA	MSCs-B
47	213117109236	TUPURI TEJASWI	MSCs-B

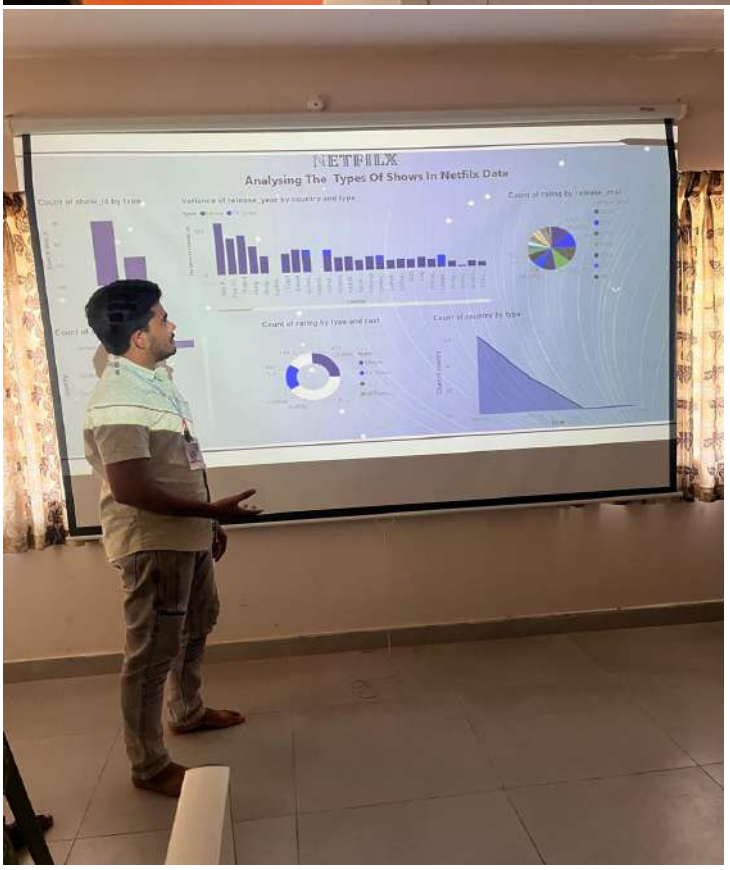
BATCH -2

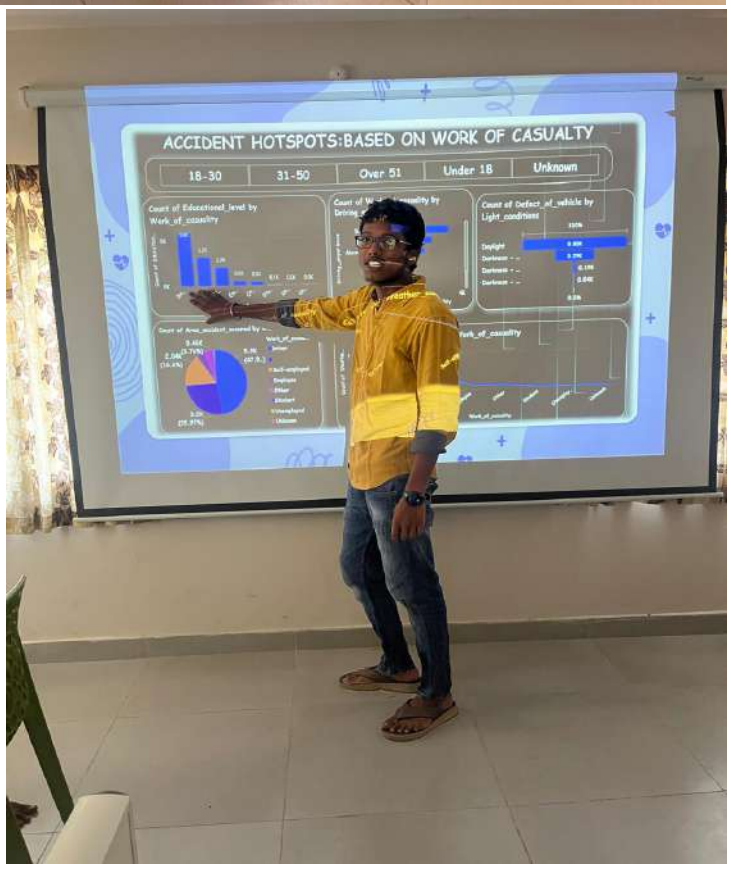
SLNO	HALL TICKET	STUDENT NAME	GROUP
1	213117137301	A MRUDHULA SATYA SRI	MECs-A
2	213117137329	GA HEMA CHANDRIKA	MECs-A
3	213117137336	G H DURGA MAHALAKSHMI	MECs-A
4	213117102046	AAVALA VANITHA	MPCs-A
5	213117102051	B BHAVANI SAI KUMARI	MPCs-A
6	213117102054	B BALA LAKSHMI PRASANNA	MPCs-A
7	213117102056	B S B LAKSHMI SRI MANASA	MPCs-A
8	213117102057	BOMMIDI DINESH	MPCs-A
9	213117102058	CHALLA RESHMA SIVANI	MPCs-A
10	213117102060	CHINTALA SUNEETHA	MPCs-A
11	213117102068	EBBA RADHIKA PHANI	MPCs-A
12	213117102071	GANTA DURGA DHAARANI	MPCs-A
13	213117102072	GANTA INDU	MPCs-A
14	213117102073	GOTTUMUKKALA TEJASWINI	MPCs-A
15	213117102096	KUNAPAREDDY BHAVANA	MPCs-A
16	213117102097	KUNAPAREDDY BHUVANA	MPCs-A
17	213117102101	MALLULA APARNA	MPCs-B
18	213117102103	M LEELA NAGA SOWJANYA	MPCs-B
19	213117102105	MONDURI SRIVALLI	MPCs-B
20	213117102108	N P NAGA LAKSHMI MANASA	MPCs-B
21	213117102114	PENMATSA HYNDAVI	MPCs-B
22	213117102119	RUDRARAJU VASANTHI	MPCs-B
23	213117102121	SAIDANI DURGA LAKSHMI	MPCs-B
24	213117102126	SEELAM SRAVANTHI	MPCs-B
25	213117102134	T GEETHA DURGA HARANI	MPCs-B
26	213117102137	UPPADA LAKSHMI	MPCs-B
27	213117102143	VENDRA DURGA SOWJANYA	MPCs-B
28	213117102147	YELURI LAKSHMI PRASANNA	MPCs-B
29	213117109158	B NAGA SRI SAI MAHESH	MSCs-A
30	213117109197	KOPPINEEDI V M SIDDARDHA	MSCs-B
31	213117109199	K V V S D PRASANTHI	MSCs-B
32	213117109200	KUKKALA LAVANYA	MSCs-B
33	213117109201	K DEVAKI KRISHNA VENI	MSCs-B
34	213117109202	LOKANTI RAMYA SRI	MSCs-B
35	213117109204	M V SAI PRIYA MANASA	MSCs-B
36	213117109206	MEELA INDRAKUMAR	MSCs-B
37	213117109208	MOHAMMAD RAZIYA SULTANA	MSCs-B
38	213117109209	MOKA BHAGYA LAKSHMI	MSCs-B
39	213117109215	P T LAKSHMI NAGA DURGA	MSCs-B
40	213117109216	PANUGANTI SAHITHI	MSCs-B
41	213117109217	PARIMI AKSHITHA	MSCs-B
42	213117109218	PENMETHSA ASWITHA	MSCs-B
43	213117109220	PILLI SHANMUKHA KUMAR	MSCs-B
44	213117109221	POOJITHA KAKARLA	MSCs-B
45	213117109225	SAGIRAJU BHAVYA SRI	MSCs-B
46	213117109227	SHAIK SAPHIYA	MSCs-B
47	213117109231	TARAGALLA SAI SIRISHA	MSCs-B
48	213117109235	TUMU SRAVANI SATYA SREE	MSCs-B
49	213117109246	ZACHARAIAH KUSUMA	MSCs-B

LECTURE ON DATA SCIENCE



PROJECT PRESENTATION





VISHNU
UNIVERSAL LEARNING

TRAIN-A-TECH
TECHNOLOGIES

2024

CERTIFICATE OF
INTERNSHIP

IS PROUDLY PRESENTED TO

AKULA JAYA SUMA GAYATHRI

For Sucessfully Completing The Internship On **Data Science** From
TRAIN-A-TECH TECHNOLOGIES In Association With **B V Raju College** Bhimavaram
From **13-02-2024 To 10-05-2024**
The Overall Performance Of The Intern During His/Her Internship Is Found To Be Satisfactory

Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

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TRAIN-A-TECH
TECHNOLOGIES

2024

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BANDARU PUJA NAGA MOULI

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2024

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BONAM KARUNAKAR

For Sucessfully Completing The Internship On **Data Science** From
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TECHNOLOGIES

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2024

IS PROUDLY PRESENTED TO

RUDRARAJU VASANTHI

For Sucessfully Completing The Internship On **Data Science** From
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Managing Director
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B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

LONG TERM INTERNSHIP
ON
NODE.JS & REACT.JS
VI th SEMISTER

Duration: 3 Months

Timings:

Batch 1: 9.30 – 12.30

Batch 2: 1.30 – 4.30

BRANCE NAME:

B.Sc MECs

B.Sc MPCs

B.Sc MSCs

B.Com

BATCH - 1

SLNO	HALL TICKET	STUDENT NAME	GROUP
1	213117137304	BANDARU NAGA SAI SRAVANI	MECs-A
2	213117137306	BANDARU SUBHASH	MECs-A
3	213117137307	BARNALA SALMAN RAJU	MECs-A
4	213117137314	CHINTAPALLI HARI KRISHNA	MECs-A
5	213117137319	D R T SRI VENKATA SHYAM	MECs-A
6	213117137321	D VENKATA SRAVANTHI	MECs-A
7	213117137322	DEVU TEJA SAI	MECs-A
8	213117137326	EBBA DEVA MANIKANTA	MECs-A
9	213117137327	EDI VIJAYABABU	MECs-A
10	213117137328	GALIDEVARA MANIKANTA	MECs-A
11	213117137331	GANDREDDY JAGAN KUMAR	MECs-A
12	213117137333	GOKETI VENKATRAO	MECs-A
13	213117137334	G G AMRUTHA VARSHINI	MECs-A
14	213117137340	J DURGA BHAVANI	MECs-A
15	213117137341	JALEM GARGI PRIYA	MECs-A
16	213117137347	K G V SIVA RAMA RAJU	MECs-A
17	213117137350	K N V PAVANI MOUNIKA	MECs-A
18	213117137351	KARUMUJJI KALYANRAM	MECs-A
19	213117137354	K YETHENDRA SWAMY	MECs-A
20	213117137358	KETHA SUKESH	MECs-B
21	213117137359	K CHARAN TEJA	MECs-B
22	213117137360	KOLLI RAMYA	MECs-B
23	213117137368	MOGANTI SAI VYSHNAVI	MECs-B
24	213117137369	MOHAMAD ANASS	MECs-B
25	213117137370	MURAPALA JYOTHIKA	MECs-B
26	213117137379	PECHETTI BHANU SAI SREE	MECs-B
27	213117137387	RAAGU DEVI NAVYA SRI	MECs-B
28	213117137394	TAMMA KOTI YASASWI	MECs-B
29	213117137395	TAMMU SAI TEJA	MECs-B
30	213117137397	THOTA NAGA BHARGAVI	MECs-B
31	213117137400	UDAYANA TRILOCHANA	MECs-B
32	213117137401	U N SAI MAHESH AYYAPPA	MECs-B
33	213117137406	V P SATYA SREE PRAVALLIKA	MECs-B
34	213117137407	VOLIPILLI GOWRI MALLIKA	MECs-B
35	213118200002	ACHANTA VINAY KUMAR	Bcom
36	213118200003	A S V RAJESH VARMA	Bcom
37	213118200006	BOBBALA GAGANA	Bcom
38	213118200020	GORTHI SESHADRI	Bcom
39	213118200025	KANDULAPATI VENKATA SAI PRASAD	Bcom
40	213118200028	KONDAVETI MURALI	Bcom
41	213118200033	N PRAVEEN KUMAR	Bcom
42	213118200043	POREDDI TEJA	Bcom
43	213118200047	SABBARAPU VIJAY KUMAR	Bcom
44	213118200056	TANNEDDI NAGA VENKATA PRADEEP	Bcom
45	213118200057	TELAGAMSETTI KAUSHIK	Bcom
46	213118200061	VEGESNA SRI VENKATA RAJU	Bcom
47	213118200062	VEMPATAPU KANNA	Bcom

BATCH- 2

SLNO	HALL TICKET	STUDENT NAME	GROUP
1	213117109149	ALAMURI H N S SRI LAKSHMI	MSCs-A
2	213117109151	ANANTHAPALLI BINDESH SAI	MSCs-A
3	213117109152	A MRUDULA MADHUMITHA	MSCs-A
4	213117109159	BOTTA GOWRI PUSHPALATHA	MSCs-A
5	213117109163	CHEEDAY HARIKA DURGA	MSCs-A
6	213117109170	CH A PHANI SAI ESWARI	MSCs-A
7	213117109171	CHITTURI SAI SRI POOJITHA	MSCs-A
8	213117109175	E BINDU SAI SRI PRIYA	MSCs-A
9	213117109182	GODI OMI SARVAGNYA	MSCs-A
10	213117109183	GORRIPARTHI BINDU PRIYA	MSCs-A
11	213117109184	GURAJA YASWANTH GANESH	MSCs-A
12	213117109186	KALIDINDI HEMALATHA	MSCs-A
13	213117109192	KETHA DIVYA JYOTHI	MSCs-A
14	213117109203	M K N V SRI RANGANAYAKULU	MSCs-B
15	213117109210	MUDDE NAGA SAI	MSCs-B
16	213117109211	NAKKA VENKAT	MSCs-B
17	213117109214	PALA DEVAGANESH	MSCs-B
18	213117109222	P HARI KIRAN MUTYAM	MSCs-B
19	213117109226	SANKU JYOTHI	MSCs-B
20	213117109237	VADLAMUDI MADHU	MSCs-B
21	213117109240	V RICHARD THOMAS	MSCs-B
22	213117109245	VEGESNA SIVAJI RAJU	MSCs-B
23	213117102047	ADDANKI ANIL	MPCs-A
24	213117102052	BALLA J N D R SURYA KIRAN	MPCs-A
25	213117102053	BHAVANA MUDUNURI	MPCs-A
26	213117102059	CHAVAKULA ANAND	MPCs-A
27	213117102061	CH VENKATA TIRUMALA RAO	MPCs-A
28	213117102065	D LAKSHMI PRAVALLIKA	MPCs-A
29	213117102066	DOLLA SATISH	MPCs-A
30	213117102076	G VENKATA SAI PRAVEEN	MPCs-A
31	213117102078	JAKKAMSETTI SRAVYA	MPCs-A
32	213117102079	J HARI NARASIMHA	MPCs-A
33	213117102080	JAVVADI RAGHU RAM	MPCs-A
34	213117102082	J V PAVAN SAI KUMAR	MPCs-A
35	213117102083	KALA GANESH KUMAR	MPCs-A
36	213117102086	KANDULA SHANMUKH	MPCs-A
37	213117102087	KARRI CHANDRA SAI REDDY	MPCs-A
38	213117102088	K UMESH CHANDRA	MPCs-A
39	213117102089	KOLA PRANATHI	MPCs-A
40	213117102091	KOLLI YESU SURESH BABU	MPCs-A
41	213117102092	KOMMOJU JYOTHI GAYATHRI	MPCs-A
42	213117102094	KOTTAPALLI RAVI TEJA	MPCs-A
43	213117102133	THIRUMANI SHANMUKA SAI	MPCs-B

LECTURE ON NODE.JS & REACT.JS

PROJECT PRESENTATION

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TECHNOLOGIES

CERTIFICATE OF
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2024

IS PROUDLY PRESENTED TO

G G AMRUTHA VARSHINI

For Sucessfully Completing The Internship On **React & Node Js** From **TRAIN-A-TECH TECHNOLOGIES** In Association With **B V Raju College** Bhimavaram From **13-02-2024 To 10-05-2024**

The Overall Performance Of The Intern During His/Her Internship Is Found To Be Satisfactory

Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

VISHNU
UNIVERSAL LEARNING

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TECHNOLOGIES

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GOKETI VENKATRAO

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Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

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TRAIN-A-TECH
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2024

CERTIFICATE OF
INTERNSHIP

IS PROUDLY PRESENTED TO

NAKKA VENKAT

For Sucessfully Completing The Internship On **React & Node Js** From **TRAIN-A-TECH TECHNOLOGIES** In Association With **B V Raju College** Bhimavaram From **13-02-2024 To 10-05-2024**

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Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

VISHNU
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TRAIN-A-TECH
TECHNOLOGIES

2024

CERTIFICATE OF
INTERNSHIP

IS PROUDLY PRESENTED TO

NIMMALA DANIYELU

For Sucessfully Completing The Internship On **React & Node Js** From **TRAIN-A-TECH TECHNOLOGIES** In Association With **B V Raju College** Bhimavaram From **13-02-2024 To 10-05-2024**

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Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

B V RAJU COLLEGE

VISHNUPUR :: BHIMAVARAM

LONG TERM INTERNSHIP
ON
VISUAL UI & UX DESIGN
VI th SEMISTER

Duration: 3 Months

Timings:

Batch 1: 9.30 – 12.30

Batch 2: 1.30 – 4.30

BRANCE NAME:

B.Sc MECs

B.Sc MPCs

B.Sc MSCs

B.Sc MPC

B.Com

BATCH - 1

SLNO	HALL TICKET	STUDENT NAME	GROUP
1	213117137302	ADDALA SUMA DEVI	MECs-A
2	213117137330	GANDIKOTA SHANTHI PRIYA	MECs-A
3	213117137342	J PRIYA DARSHINI	MECs-A
4	213117137345	KADALI MOUNIKA	MECs-A
5	213117101001	AGUDU NAGA SATYA VARSHITHA	MPC
6	213117101003	ANTHARVEDI DEEKSHIKA	MPC
7	213117101009	BOINA DEEVENA KUMARI	MPC
8	213117101013	GOLAGANI HIMA HARSHINI	MPC
9	213117109153	A V N SAI DWARAKA SRINIVAS	MSCs-A
10	213118200004	BALE DURGABHAVANI	Bcom
11	213118200005	BARRE JITENDRA NAGA KUMAR	Bcom
12	213118200007	BODAPUDI SANDEEP PRAJWAL	Bcom
13	213118200008	BODDU DURGA VENKATA SASANK	Bcom
14	213118200011	CHELLABOINA SANJAY SIVA KUMAR	Bcom
15	213118200012	CHENNAMSETTI VAMSI KIRAN	Bcom
16	213118200014	Ch NIKHIL	Bcom
17	213118200015	DESHPET NIKITHA	Bcom
18	213118200017	GANTA BHARAT KUMAR	Bcom
19	213118200019	GORLE MANIKANTA	Bcom
20	213118200022	JAVVADI LALITHA SATYA PRIYA	Bcom
21	213118200023	KADALI LOHITHA SRI RAGHAVEE	Bcom
22	213118200024	KAKULAPATI NAVEEN	Bcom
23	213118200027	K PHANI	Bcom
24	213118200031	KOPPARTHI SRI HARSHA	Bcom
25	213118200032	KORADA SYAM PAL	Bcom
26	213118200034	MANISHA DAS	Bcom
27	213118200035	MEDIDI DAYANA	Bcom
28	213118200037	NADIMPALLI NITHIN TEJA	Bcom
29	213118200039	PERIKALA VIKAS CHAKRAVARTHY	Bcom
30	213118200040	PERIKETI HARINI	Bcom
31	213118200042	POLETI MOSHE	Bcom
32	213118200044	PRATHIPATI NAVEEN SAI KRISHNA	Bcom
33	213118200045	RAYINUTHULA SINDHU	Bcom
34	213118200048	SAIPU TEJASWINI	Bcom
35	213118200051	SAYANA KUSUMA SRI	Bcom
36	213118200052	S R KRISHNA PRASAD	Bcom
37	213118200053	SHAIK AARIFA	Bcom
38	213118200054	SHEIK NAZEER	Bcom
39	213118200055	T ASHISH RAJ	Bcom
40	213118200058	TUMMAPUDI NARENDRA BALAJI	Bcom
41	213118200059	VATALA INDRANI	Bcom
42	213118200060	VEGESNA JASWANTH VARMA	Bcom
43	213118200063	VINJAMURI KRANTHI KUMAR	Bcom
44	213118200064	YAJJALA LAVANYA MAHIMA	Bcom
45	213118200065	YANDAMURI YESEBU RAJU	Bcom
46	213118200066	YENUGUPALLI CHANTI	Bcom

BATCH - 2

SLNO	HALL TICKET	STUDENT NAME	GROUP
1	213117137363	KOSURI NAMITHA SRI	MECs-B
2	213117137366	MANTHENA NAGA SRUTHI SRI	MECs-B
3	213117137377	PAILA MONALI	MECs-B
4	213117137382	PENMATSA JEESHITHA	MECs-B
5	213117137385	POTNURI MOUNIKA	MECs-B
6	213117137403	VEGESNA SITARAMA RAJU	MECs-B
7	213117137404	V K V V SATYANARAYANA	MECs-B
8	213117137405	V MADHAVI DURGA	MECs-B
9	213117109243	V J SATYA SAI SRINIVAS	MSCs-B
10	213117102048	AKULA HARINADH SAI	MPCs-A
11	213117102050	ALLAM NAGA SAI CHARAN	MPCs-A
12	213117102055	B JHANSI MAHA LAKSHMI	MPCs-A
13	213117102062	CH VENKATA NAGA SWATHI	MPCs-A
14	213117102063	CHITTINEEDI DINESH	MPCs-A
15	213117102064	D MOUNIKA	MPCs-A
16	213117102067	DYVALA MEGHANA	MPCs-A
17	213117102069	G GEETHA MAHA LAKSHMI	MPCs-A
18	213117102074	GOWRI ANUSHA	MPCs-A
19	213117102075	GUDAPATI VANAJA	MPCs-A
20	213117102081	JUTTIGA SRI RAM	MPCs-A
21	213117102090	K E SRI VENKATA KUMAR	MPCs-A
22	213117102093	K GAYATHRI NAGA MANI	MPCs-A
23	213117102095	K VENKATA CHAITANYA	MPCs-A
24	213117102098	L JAYA SURYA SESHU KUMAR	MPCs-A
25	213117102100	MAGHAM VENKATA NAVYA SRI	MPCs-A
26	213117102104	MOHAMMAD BADIUDDIN	MPCs-B
27	213117102106	MULAGAPATI KEERTHI SREE	MPCs-B
28	213117102109	PALA KIRAN	MPCs-B
29	213117102110	PALURI DIVIJA KALPA	MPCs-B
30	213117102111	PAUDEL JAMES	MPCs-B
31	213117102112	PECHETTI JAYA SRI	MPCs-B
32	213117102113	PEDDINTI KRISHNA MOHAN	MPCs-B
33	213117102116	RAJANALA HEMA GOWRI	MPCs-B
34	213117102117	R C LAKSHMI NARAYANA	MPCs-B
35	213117102118	R VENKATA LAKSHMI DEEPIKA	MPCs-B
36	213117102120	SABBITHI SUNNY	MPCs-B
37	213117102122	SAIDU JAYA DURGA	MPCs-B
38	213117102124	SANNAMANDRA PRASANNA	MPCs-B
39	213117102123	S RUKMINI SRI SATYA SIVANI	MPCs-B
40	213117102125	S NAGA SATYA MOHANA	MPCs-B
41	213117102127	S AASRITHA LAKSHMI	MPCs-B
42	213117102128	SHAIK SHILAR BEEBI	MPCs-B

43	213117102129	TADI MAHIMAJYOTHI	MPCs-B
44	213117102130	TALARI JAYA PRAKASH	MPCs-B
45	213117102131	TAMMU JHANSI RANI	MPCs-B
46	213117102135	T TINOJ SIVA SAI MANIKANTA	MPCs-B
47	213117102136	T TANUJ KUMAR	MPCs-B
48	213117102140	V V N R JAGADEESH TARUN	MPCs-B
49	213117102141	VANAM BHARATH NIMMALU	MPCs-B
50	213117102142	VELPURI SAI HEMANTH	MPCs-B
51	213117102144	VENDRA PAVANI	MPCs-B
52	213117102145	YALAMANCHILI ANNAPPA	MPCs-B

LECTURE ON VISUAL UI & UX DESIGN

PROJECT PRESENTATION

CERTIFICATE DISTRIBUTION

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2024

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For Sucessfully Completing The Internship On **React & Node Js** From **TRAIN-A-TECH TECHNOLOGIES** In Association With **B V Raju College** Bhimavaram From **13-02-2024 To 10-05-2024**

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Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

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POREDDI TEJA

For Sucessfully Completing The Internship On **React & Node Js** From **TRAIN-A-TECH TECHNOLOGIES** In Association With **B V Raju College** Bhimavaram From **13-02-2024 To 10-05-2024**

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Managing Director
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TECHNOLOGIES

2024

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BOBBALA GAGANA

For Sucessfully Completing The Internship On **React & Node Js** From **TRAIN-A-TECH TECHNOLOGIES** In Association With **B V Raju College** Bhimavaram From **13-02-2024 To 10-05-2024**

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Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

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2024

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SABBARAPU VIJAY KUMAR

For Sucessfully Completing The Internship On **React & Node Js** From
TRAIN-A-TECH TECHNOLOGIES In Association With **B V Raju College** Bhimavaram
From **13-02-2024 To 10-05-2024**
The Overall Performance Of The Intern During His/Her Internship Is Found To Be Satisfactory

Train-A-Tech Pvt. Ltd. Hyderabad

Ravi Chander Gurijala
Managing Director
Date : 10-05-2024

aws academy

YARRAMSETTI VENKATA SRILAKSHMI

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AWS Academy Graduate - AWS Academy Cloud Architecting

Course hours completed

40 hours

Issued on

06/30/2023

Digital badge

https://www.credly.com/go/AjfMMJYv

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National Educational Alliance for Technology

अखिल भारतीय तकनीकी शिक्षा परिषद्
All India Council for Technical Education

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Certificate of Virtual Internship

This is to certify that

PODURI SATHISH

B V Raju Institute of Technology

has successfully completed 10 weeks

AWS Cloud Virtual Internship

during May - July 2023

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :96c558c794a95d1b620b91b7eff933c2
Student ID :STU644b5e77772ea1682660983

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **PINNAMRAJU MOHIT VARMA** , Course : B. Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200041 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 0987ed5e645caa7debb052b9429908c2

Date : 13th May 2024

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Certificate of Virtual Internship

This is to certify that

Harini Periketi

B. V. Raju College

has successfully completed 10 weeks

Cloud Virtual Internship

During April - June 2024

Curriculum Provided by:

aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :45cbcca965948d0b479ce5966bc63cc1
Student ID :STU64e4bc7d6d6881692712061

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All India Council for Technical Education

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Nadimpalli Nithin teja

B. V. Raju College

has successfully completed 10 weeks

Data Engineering Virtual Internship

During January - March 2024

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :5ef8343d63e5cd00198759b706434064
Student ID :STU64e460544c98f1692688468

GRADE- O (Outstanding) 90-100 | E (Excellent) 80-89 | A (Very Good) 70-79 | B (Good) 60-69 | C (Fair) 50-59 | D (Average) 40-49

INTERNSHIP GRADE C

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National Educational Alliance for Technology

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Certificate of Virtual Internship

This is to certify that

MEDIDI DAYANA

B. V. Raju College

has successfully completed 10 weeks

Cloud Virtual Internship

During April - June 2024

Curriculum Provided by:

aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :cbb4c6d57e80af2b3592a1f5dd7469ba
Student ID :STU65f42b0ae4bef1710500618

INTERNSHIP GRADE E

GRADE: O (Outstanding) 90-100 , E (Excellent) 80-89 , A (Very Good) 70-79 , B (Good) 60-69 , C (Fair) 50-59 , D (Average) 40-49 , P (Pass) 30-39 , F (Fail) Below 30

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **MANISHA DAS** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200034 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 724ddaa61f8af38fb8a73538cbbfcfc0

Date : 20th May 2024

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Chief Technology Officer (CTO)
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AICTE - EduSkills
2024
VIRTUAL INTERNSHIP

Certificate of Virtual Internship

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MADIREDDY PRAVEEN KUMAR

B. V. Raju College

has successfully completed 10 weeks

Data Engineering Virtual Internship

During January - March 2024

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :18f85a9928c257f3d72e21742941878c
Student ID :STU65f526a186a271710565025

INTERNSHIP GRADE
B

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AICTE - EduSkills 2024 VIRTUAL INTERNSHIP

Certificate of Virtual Internship

This is to certify that

syam korada

B. V. Raju College

has successfully completed 10 weeks

Data Engineering Virtual Internship

During January - March 2024

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :f5121cdec0ddd57def050c89cf99a38a
Student ID :STU65f425d10b2181710499281

INTERNSHIP GRADE D

GRADE- O (Outstanding) 90-100 E (Excellent) 80-89 A (Very Good) 70-79 B (Good) 60-69 C (Fair) 50-59 D (Average) 40-49 P (Pass) 30-39 F (Fail) Below 30

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This is to certify that Ms./Mr. **KOPPARTHI SRI HARSHA** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200031 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 68c9836a7fd9d638c0d9996645949324

Date : 20th May 2024

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **KONDETI MAHA LAKSHMI** , Course : B. Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200029 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 2aa11a39e3a9b330673f77eac3c96c2e

Date : 8th May 2024

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **KONDAVETI MURALI** , Course : B. Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200028 Under **B. V. Raju College** of **Adikavi Nannaya University** has *Successfully completed the Long-Term Internship for 240 Hours on* AWS AI-ML & Data Engineering *Organised by* ***EduSkills*** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

Certificate No : 58724a545cf7775c4343770cfefdb693

Date : 8th May 2024

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **KASIREDDY PHANI** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200027 Under **B. V. Raju College** of **Adikavi Nannaya University** has *Successfully completed the Long-Term Internship for 240 Hours on* AWS AI-ML & Data Engineering *Organised by* **EduSkills** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

Certificate No : 3a9d1e837e2b96c46138dab6639183aa

Date : 20th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
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2023
VIRTUAL INTERNSHIP

Certificate of Virtual Internship

This is to certify that

kalyan Varma

B. V. Raju College

has successfully completed 10 weeks

Cloud Virtual Internship

During September - November 2023

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :83fb2adda622e17a55d426ff0b7a1c40
Student ID :STU64e43b46ef3701692678982

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ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **KANDULAPATI VENKATA SAI PRASAD** , Course : B.Com, Branch : Compute

Applications, Semester : 6th, Roll No : 213118200025 Under **B. V. Raju College** of **Adikavi Nannaya Universit**

has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering

Organised by ***EduSkills*** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

Certificate No : f5c22ab5e59113263a39d9b571fksjk41

Date : 20th May 2024

2024

Chief Technology Officer (CTO)
EduSkills

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **KAKULAPATI NAVEEN** Course : **B.Com** Branch : **Computer Applications** Semester : **6th** Roll No : **213118200024** Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on **AWS AI-ML & Data Engineering** Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**

Certificate No : 5a119e5d3b01e87c3[illegible]
Date : 20th May 2024

APSCHE EduSkills 2024 Virtual Internships

Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **KADALI LOHITHA SRI RAGHAVEE** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200023 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 74bd058c909e131d165491ef550530fc

Date : 20th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
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All India Council for Technical Education

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Certificate of Virtual Internship

This is to certify that

JAVVADI LALITHA

B. V. Raju College

has successfully completed 10 weeks

AI-ML Virtual Internship

During April - June 2024

Curriculum Provided by:

aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :e691a0d2f8057c94ef63ce7bce6061aa
Student ID :STU64e44f82b1d3c1692684162

GRADE - O (Outstanding) 90-100 E (Excellent) 80-89 A (Very Good) 70-79 B (Good) 60-69 C (Fair) 50-59 D (Average)

INTERNSHIP GRADE P

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **JAMPANA HARSHA VARDHAN SAI RAM**, Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200021 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : [illegible]

Date : 20th May 2024

2024

Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **GORTHI.SESHADRI** , Course : B.Com, Branch : Computer Applications,Semester 6th, Roll No : 213118200020 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by ***EduSkills*** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : f5c22ab5e591f3263a39d9b57ff734564

Date : 20th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **GORLE MANIKANTA** , Course : B. Com. Branch : Computer Applications,

Semester : 6th, Roll No : 213118200019 Under **B. V. Raju College** of **Adikavi Nannaya University** has

Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering

Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : b2400b3bc79e03e1575ae16a90044f41

Date : 8th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
EduSkills

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All India Council for Technical Education

EduSkills
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Certificate of Virtual Internship

This is to certify that

Ganta Bharath Kumar

B. V. Raju College

has successfully completed 10 weeks

Data Engineering Virtual Internship

During January - March 2024

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :998cd7f3e62848b0ccb1e560be11b4bd

Student ID :STU64e4590f55e681692686607

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **GADIRAJU PRUDHVI NIKITH VARMA** , Course : B. Com. Branch : Computer Applications, Semester : 6th, Roll No : 213118200016 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS Cloud & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 7b1f3c1808015e0d4528527b4410c04f

Date : 13th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
EduSkills

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AICTE - EduSkills
2023
VIRTUAL INTERNSHIP

Certificate of Virtual Internship

This is to certify that

Deshpet Nikitha

B. V. Raju College

has successfully completed 10 weeks

AI-ML Virtual Internship

During September - November 2023

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :6b59ed2bcccc6e157b03294aa897bca0
Student ID :STU64e4520982c841692684809

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **CH NIKHIL** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200014 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by ***EduSkills*** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

Certificate No : 4f035243af49703234bea1335dc3a153

Date : 20th May 2024

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Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **CHINTALAPATI VAMSI VARMA** , Course : B. Com. Branch : Computer Applications, Semester : 6th, Roll No : 213118200013 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Certificate No : 32b826a41f2ce0ac21edc37cc8c6b711

Date : 13th May 2024

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All India Council for Technical Education

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2024
VIRTUAL INTERNSHIP

Certificate of Virtual Internship

This is to certify that

CHELLABOINA SANJAY SIVA KUMAR

B. V. Raju College

has successfully completed 10 weeks

AI-ML Virtual Internship

During April - June 2024

Curriculum Provided by:

aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :925a5e96f817d229d46b8eb559dc17f9
Student ID :STU64e4460ceec4a1692681740

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **CHEKURI BHARATH BALAJI VARMA** , Course : B. Com. Branch : Computer Applications, Semester : 6th, Roll No : 213118200010 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : d5172ae9d5189c31bfae8e00825db666

Date : 13th May 2024

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Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **CHEEPU JAYANTH** , Course : B. Com, Branch : *Computer Applications,*

Semester : 6th, Roll No : 213118200009 Under **B. V. Raju College** of **Adikavi Nannaya University** has

Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering

Organised by ***EduSkills*** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

Certificate No : 266445053869db3b088347de4ef5d727

Date : 8th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
EduSkills

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **BODDU DURGA VENKATA SASANK** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200008 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 18d87b898a2dab05b9449ea6b27c004f

Date : 20th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
EduSkills

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EduSkills
Nation Building Through Skills

AICTE - EduSkills 2024 VIRTUAL INTERNSHIP

Certificate of Virtual Internship

This is to certify that

SANDEEP PRAJWAL

B. V. Raju College

has successfully completed 10 weeks

Data Engineering Virtual Internship

During January - March 2024

Supported By aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :102b99fa497df0454944840886348e63
Student ID : STU65f51da9c87db1710562729

GRADE: O (Outstanding) 90-100 | E (Excellent) 80-89 | A (Very Good) 70-79 | B (Good) 60-69

Certificate of Virtual Internship

This is to certify that

Jitendra Naga Kumar Barre

B. V. Raju College

has successfully completed 10 weeks

Cloud Virtual Internship

During April - June 2024

Curriculum Provided by:

aws academy

Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE

Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills

Certificate ID :cb84fbdeedc42012e1be33d438119f65
Student ID :STU65f53a57f020d1710570071

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **BALE DURGABHAVANI** . Course : B.Com. Branch : Computer Applications.

Semester : 6th. Roll No : 213118200004 Under **B. V. Raju College** of **Adikavi Nannaya University** has

Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering

Organised by ***EduSkills*** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

ertificate No : 6f80aab61bc5109248dda500c66e546a

te : 20th May 2024

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Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **ALLURI.SAI VENKATA RAJESH VARMA** , Course : B.Com, Branch : Computer Applications, Semester : 6th, Roll No : 213118200003 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by ***EduSkills*** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

ficate No : f5c22ab5e591f3263a39d9b57ffksjk41

20th May 2024

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Chief Technology Officer (CTO)
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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **ACHANTA.VINAYKUMAR** , Course : B.Com, Branch : *Computer Applications*,

Semester : 6th, Roll No : 213118200002 Under **B. V. Raju College** of **Adikavi Nannaya University** has

Successfully completed the ***Long-Term*** *Internship* for 240 Hours on AWS AI-ML & Data Engineering

Organised by ***EduSkills*** *in Collaboration with* **Andhra Pradesh State Council of Higher Education**.

Certificate No : f5c22ab5e591f3263a39d9b57ff737f4

Date : 20th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
EduSkills

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CERTIFICATE OF COMPLETION

This is to certify that Ms./Mr. **A MADHAVI PHANI LALITHA RAMYASRI** , Course : *B. Com*, Branch : *Computer Applications*, Semester : 6th, Roll No : 213118200001 Under **B. V. Raju College** of **Adikavi Nannaya University** has Successfully completed the Long-Term Internship for 240 Hours on AWS AI-ML & Data Engineering Organised by **EduSkills** in Collaboration with **Andhra Pradesh State Council of Higher Education**.

Certificate No : 402bf90aa09bb4e0a6a95856c1b4e973

Date : 13th May 2024

APSCHE - EduSkills 2024 VIRTUAL INTERNSHIP

Chief Technology Officer (CTO)
EduSkills

S.NO	REGISTER NUMBER	NAME OF THE STUDENT	FROM	TO	PROJECT TITLE	LOCATION
1	213117141408	A.RESHMA SATYA	15-Mar	15-May	BIOCHEMISTRY ANALYSIS	SRI BALAJI CLINICAL LABS,
2	213117141409	A.SOWMYA SATYA DURGA TEJASWINI	26-Feb	26-Mar	HANDLING ON MEDICAL LABORATORY TECHNIQUES	IMPERIAL HOSPITALIZED LABS,BHIMAVARAM
3	213117141410	A.NAGA LAKSHMI	16-Feb	16-Mar	BIOCHEMISTRY ANALYSIS	VARMA HOSPITALS,BHIMAVARAM
4	213117141411	A.DURGA PRASAD	15-Mar	15-May	BIOCHEMISTRY ANALYSIS	SRI BALAJI CLINICAL LABS,
5	213117141412	B.P.K MAHALAKSHMI	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
6	213117141413	B.SAI GOPICHAND	01-Feb	05-May	MICROBIAL CONTAMINATION OF YOGURT	ADHYA BIOSCIENCES,MAGARANIPETA,VISHAKAPATNAM
7	213117141414	B.NANDHINI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF HIBISCUS ROSEUS THORE BASED ON MANGANESE MONOXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
8	213117141415	B.CHARAN SAI DATTA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF GUAVA(PSIDIUM GUAJAVA) BASED ALLUMINIUM OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
9	213117141416	CH.PAVAN KALYAN	01-Feb	30-Apr	BIOCHEMISTRY ANALYSIS	SLD SPECIALITY LABS,BHIMAVARAM
10	213117141417	D.LIKITHA SRIVALLI	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
11	213117141418	D.LAKSHMI HARSHA SRI PRIYANKA	03-Mar	06-Apr	MICROBIAL TESTING IN PHARMACEUTICAL LABORATORY	MSN PHARMA LABORATORIES,HYDERABAD
12	213117141419	G.SOWJANYA	03-Mar	06-Apr	MICROBIAL TESTING IN PHARMACEUTICAL LABORATORY	MSN PHARMA LABORATORIES,HYDERABAD
13	213117141420	G.SWANTHANA HANSHITHA	16-Feb	16-Mar	BIOCHEMISTRY ANALYSIS	VARMA HOSPITALS,BHIMAVARAM
14	213117141421	G.HEMANTH KUMAR	01-Feb	30-Apr	BIOCHEMISTRY ANALYSIS	ASN RAJU BOOLD BANK,BHIMAVARAM

15	213117141422	G.DEVI SARANYA	01-Feb	05-May	ISOLATION AND IDENTIFICATION OF BACTERIAL ASSOCIATED WITH WOUND SEPSIS	ADHYA BIOSCIENCES,MAGARANIPETA,VISHAKAPATNAM
16	213117141423	G.KEERTHI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF GINGER(ZINGIBER OFFCINALE) BASED SILVER NITRATE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
17	213117141424	I.BHAVYA SRI SATYA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
18	213117141425	I.VYSHNAVI	21-Feb	15-May	GENERAL APPLICATIONS OF MICROBIOLOGY IN QUALITY CONTROL OF PHARMACEUTICAL COMPANY	BIOLOGICAL E.LTD,HYDERABAD
19	213117141426	J.ANITHA DEVI	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
20	213117141427	K.VEERA VENKATA MANIDEEP	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
21	213117141428	K.DURGA SARANYA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
22	213117141429	K.HARSHA DEEPIL	01-Feb	05-May	MICROBIAL CONTAMINATION OF YOGURT	ADHYA BIOSCIENCES,MAGARANIPETA,VISHAKAPATNAM
23	213117141430	K.AJITH BABU	15-Mar	15-May	BIOCHEMISTRY ANALYSIS	SRI BALAJI CLINICAL LABS,
24	213117141431	K.GAYATHRI	14-Feb	13-May	MICROBIOLOGY OF PHARMA	AUROBINDO PHARMA PVT LTD,BACHUPALLY,HYDERABAD
25	213117141432	K.BEULAH	26-Feb	26-Mar	HANDLING ON MEDICAL LABORATORY TECHNIQUES	IMPERIAL HOSPITALIZED LABS,BHIMAVARAM
26	213117141433	K. BABY SRI ANU DEEPTHI	19-Feb	08-May	APPLICATIONS OF MICROBIOLOGY IN LABORATORIES	KAMINENI HEALTH SERVICES PVT LTD,HYDERABAD
27	213117141434	L. AMITHA	12-Feb	06-May	ISOLATION AND CHARACTERIZATION OF MICROORGANISM INVOLVED AND USED	ADHYA BIOSCIENCES,MAGARANIPETA,VISHAKAPATNAM

					AS BIOPESTICIDES	
28	213117141435	M.NIHARIKA	26-Feb	26-Mar	HANDLING ON MEDICAL LABORATORY TECHNIQUES	IMPERIAL HOSPITALIZED LABS,BHIMAVARAM
29	213117141436	M.HARISH	01-Feb	30-Apr	BIOCHEMISTRY ANALYSIS	SLD SPECIALITY LABS,BHIMAVARAM
30	213117141437	M.PRAVEEN	01-Feb	05-May	DECIPHERING THE ROLE OF mRNA DEADENYLATION IN BREAST CANCER	UNIVERSITY OF HYDERABAD
31	213117141438	M.YASHODHARANI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF HIBISCUS ROSEUS THORE BASED ON MANGANESE MONOXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
32	213117141439	M.JAHNAVI	03-Mar	06-Apr	MICROBIAL TESTING IN PHARMACEUTICAL LABORATORY	MSN PHARMA LABORATORIES,HYDERABAD
33	213117141440	N.LIKITHA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
34	213117141441	N.RAJESH	01-Feb	05-May	ROLE OF ARLA IN LYSOSOMAL DISTRIBUTION AND ITS SIGNIFICANCE IN BREAST CANCER	UNIVERSITY OF HYDERABAD
35	213117141442	O.BHANU SAILAJA	26-Feb	26-Mar	HANDLING ON MEDICAL LABORATORY TECHNIQUES	IMPERIAL HOSPITALIZED LABS,BHIMAVARAM
36	213117141443	O.DEEPIKA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF NEEM(AZADIRCHTA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
37	213117141445	P.MOUNIKA DEVI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF GINGER(ZINGIBER OFFCINALE) BASED SILVER NITRATE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
38	213117141446	P.MOUNIKA	26-Feb	26-Mar	HANDLING ON MEDICAL LABORATORY TECHNIQUES	IMPERIAL HOSPITALIZED LABS,BHIMAVARAM
39	213117141447	P.UMA MAHESWARI	16-Feb	16-Mar	BIOCHEMISTRY ANALYSIS	VARMA HOSPITALS,BHIMAVARAM
40	213117141448	P.SRAVANI	26-Feb	26-Mar	HANDLING ON MEDICAL LABORATORY TECHNIQUES	IMPERIAL HOSPITALIZED LABS,BHIMAVARAM

41	213117141450	R.CHINMAYI	02-Mar	06-Apr	MICROBIAL TESTING IN PHARMACEUTICAL LABORATORY	MSN PHARMA LABORATORIES,HYDERABAD
42	213117141451	S.S.SAI PRASANNA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF HIBISCUS ROSEUS THORE BASED ON MANGANESE MONOXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
43	213117141452	T.VASAVI PRIYA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
44	213117141453	T.AKSHARA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF NEEM(AZADIRCHTA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
45	213117141454	T.KANAKA DURGA	17-Feb	17-May	PHARMACEUTICAL LABORATORIES	SYMED LABS PRIVATE LIMITED, HYDERABAD
46	213117141455	U.SAI LOHITHA	03-Mar	06-Apr	MICROBIAL TESTING IN PHARMACEUTICAL LABORATORY	MSN PHARMA LABORATORIES,HYDERABAD
47	213117141456	V.DEEPIKA				
48	213117141457	Y.HIMAJA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS,B.V RAJU COLLEGE,BHIMAVARAM
49	213117141458	Y.JHANSI PRASANNA	19-Feb	08-May	APPLICATIONS OF MICROBIOLOGY IN LABORATORIES	KAMINENI HEALTH SERVICES PVT LTD,HYDERABAD

BIO ENVIRO CHEMICAL SOLUTIONS,vishakapatnam						
list of long term intrenship						
S.No.	**Register Number**	**Name of the Student**	**From**	**To**	**Project Title**	**Location**
1	213117121247	Ayinampudi Venkata Sri Koushitha	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF HIBISCUS (HIBISCUS ROSA SINENSIS) BASED MANGANESE OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
2	213117121248	V. Naga Jaya Sai Sree	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF NEEM (AZADIRCHTA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
3	213117121249	Baisetti Sai Manikanta	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
4	213117121251	Boyina Tarun Sekhar	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
5	213117121253	Dasari Naga Ambika	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GINGER (ZINGERBER OFFICINATE) BASED SILVER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
6	213117121254	Davala Renuka	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GINGER (ZINGERBER OFFICINATE) BASED SILVER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
7	213117121255	Gandaboina Jahnavi	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO (MANGIFERA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
8	213117121256	Geddam Krishnam Naidu	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
9	213117121269	Lakshmi Priya Madabhushi	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF HIBISCUS (HIBISCUS ROSA SINENSIS) BASED MANGANESE OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
10	213117121270	Maccha Eswar	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS

11	213117121271	Mangipudi Venkateswarlu	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
12	213117121272	Mohammad Uzma Gousia Affrin	15-Feb	15-May	ANTI BACTERIAL AND ANTIOXIDANT ACTIVITY OF OCIMUM SANCTUM (HOLY BASIL) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
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14	213117121274	Mypala Rama Tulasi	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF NEEM (AZADIRCHTA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
15	213117121276	Nakka Hebsiba Rani	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO (MANGIFERA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
16	213117121279	Nunna Manjula	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF NEEM (AZADIRCHTA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
17	213117121280	Pakalapati Asritha	15-Feb	15-May	ANTI BACTERIAL AND ANTIOXIDANT ACTIVITY OF OCIMUM SANCTUM (HOLY BASIL) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
18	213117121286	Posinasetti Sai Priyanka	15-Feb	15-May	ANTI BACTERIAL AND ANTIOXIDANT ACTIVITY OF TUALSI (OCIMUM SANCTUM) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
19	213117121288	Reddy Harshitha Devi	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO (MANGIFERA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
20	213117121292	Tadicharla Sai Sri	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO (MANGIFERA INDICA) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
21	213117121295	Vari Guna Sekhar	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS

22	213117121296	Vasa Durga Naga Sai	15-Feb	15-May	ANTI BACTERIAL AND ANTIOXIDANT ACTIVITY OF TUALSI (OCIMUM SANCTUM) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
23	213117121297	Vasa Gopika	15-Feb	15-May	ANTI BACTERIAL AND ANTIOXIDANT ACTIVITY OF TUALSI (OCIMUM SANCTUM) BASED COPPER OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
24	213117121299	Veeramallu Saraswathi Rao	15-Feb	15-May	ANTI BACTERIAL AND ANTIFUNGAL ACTIVITY OF GUAVA (PSIDIUM GUAJAVA) BASED ALUMINIUM OXIDE NANO PARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
25	213117141412	B.P.K MAHALAKSHMI	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
26	213117141414	B.NANDHINI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF HIBISCUS ROSEUS THORE BASED ON MANGANESE MONOXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
27	213117141415	B.CHARAN SAI DATTA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF GUAVA(PSIDIUM GUAJAVA) BASED ALLUMINIUM OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
28	213117141417	D.LIKITHA SRIVALLI	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
29	213117141423	G.KEERTHI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF GINGER(ZINGIBER OFFCINALE) BASED SILVER NITRATE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
30	213117141424	I.BHAVYA SRI SATYA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
31	213117141426	J.ANITHA DEVI	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF MANGO(MANGIFERA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
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33	213117141428	K.DURGA SARANYA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
34	213117141438	M.YASHODHARANI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF HIBISCUS ROSEUS THORE BASED ON MANGANESE MONOXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
35	213117141440	N.LIKITHA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
36	213117141443	O.DEEPIKA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF NEEM(AZADIRCHTA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
37	213117141445	P.MOUNIKA DEVI	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF GINGER(ZINGIBER OFFCINALE) BASED SILVER NITRATE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
38	213117141451	S.S.SAI PRASANNA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF HIBISCUS ROSEUS THORE BASED ON MANGANESE MONOXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
39	213117141452	T.VASAVI PRIYA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
40	213117141453	T.AKSHARA	15-Feb	15-May	ANTI BACTERIAL AND ANTI FUNGAL ACTIVITY OF NEEM(AZADIRCHTA INDICA) BASED COPPER OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS
41	213117141457	Y.HIMAJA	15-Feb	15-May	ANTI MICROBIAL AND ANTI OXIDANT ACTIVITY OF COSTUS IGNEUS(CHAMAECOSTUS CUSPIDATUS) BASED FERRIC OXIDE NANOPARTICLES	BIO ENVIRO CHEMICAL SOLUTIONS

AntibacterialandAntifungalactivityof Mango(*Mangiferaindica*)based Copper oxide nanoparticles

Aninternshipreportsubmittedinaccordancewiththerequirementfor thedegree of B.Sc.

Submittedby

TADICHARLA SAI SRI

RollNo.213117121292

Group:C.BC.BTLIFESCIENCES

VISHNU
UNIVERSAL LEARNING

UNDERTHEGUIDANCEOF

Director

BioEnviroChemical

Solutions

(AnISO9001CertifiedR&DLaboratory)

Visakhapatnam-530017

BECS

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based Copper oxide nanoparticles** is a bonafide work done by **T.SAi SRI** with Reg. Number **213117121292** submitted in partial fulfilment of the work for the Degree of Bachelor Science (**IC.btbc**) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

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Department of Life Sciences
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EXAMINERS:

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BECS Bio Enviro Chemical Solutions

An ISO 9001:2015 certified laboratory
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APPCB: PCB/ROVSP/BMW/HCE-/2022
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This is to certify that Ms. TADICHARLA SAI SRI, Regd. No. 213117121292 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF MANGIFERA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
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Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

REDDY HARSHITHA DEVI

Roll No. 213117121288

Group: C.BC.BT LIFE SCIENCES

VISHNU
UNIVERSAL LEARNING

UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical

Solutions

(An ISO 9001 Certified R&D Laboratory)

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BECS

BECS Bio Enviro Chemical Solutions

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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Director
DIRECTOR
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Visakhapatnam-530017, India

Date: 22-05-24
Place: Visakhapatnam

VISHNU B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based copper oxide nanoparticles** is a bonafide work done by **R.Harshithadevi** . with Reg. Number **2131172128 8** submitted in partial fulfilment of the work for the Degree of Bachelor Science) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

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SEMESTER INTERNSHIP

Name of the student: **REDDY HARSHITHA DEVI**

Name of the college: B V RAJU COLLEGE

Registration Number: 213117121288

Period of internship: FEBRAURY TO MAY

Name and address of the intern organization: Bio enviro chemical solutions (BECS), Chinna waltair, Visakhapatnam, Andhra Pradesh-530017.

STUDENT'S DECLARATION

I, **REDDY HARSHITHA DEVI**, student of Bachelor of Science Program,Reg. No.**213117121288** of ..... do hereby declare that I have completed the mandatory internship from ……..to ..... in Bio enviro chemical solutions (BECS) Lab, under the faculty guideship of……., Assistant professor of department of Chemistry, ……college name …….

Signature and Date

CERTIFICATE FROM INTERN ORGANIZATION

This is to certify that **R. HARSHITHA DEVI** Reg. No.**213117121288** of ……underwent internship in Bio enviro chemical solutions (BECS) from …….. to……...

The overall performance of the intern during his/her internship is found to be_____(Satisfactory/Not Satisfactory).

Authorized Signatory with Date and Seal

ACKNOWLEDGMENT

I would like to thank **Dr. B. Satish Mohan sir, Managing Director** of Bio Enviro Chemical Solutions for giving us this wonderful opportunity for the 3 Month Apprenticeship in their institution.

I am highly indebted to …….for her guidance and constant supervision as well as for providing necessary information regarding the project and also for their support in completing the project. Her constant guidance and willingness to share her vast knowledge made us understand this project and its manifestations in great depths and helped us to complete the assigned tasks on time.

I am also very grateful to the……., and also to the ……..in the institution for sharing their knowledge and experience with us in this internship as it would be impossible for us to fulfill the project without their support and encouragement.

It has been great honour and privilege to undergo training at Bio Enviro Chemical Solutions.

I sincerely thank....., for giving me the opportunity to do my internship work in …….

I am grateful to**, ...**for inspiring us with her knowledge and motivation.

I would like to extend my sincere thanks to all my faculty advisors andespecially my mentor, **……..** for her timely guidance and constant supervision.

I would like to express my gratitude towards my parents for their kindcooperation and encouragement which help me in completion of this project.

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1. INTRODUCTION

Nanomaterials are the basis of nanoscience and nanotechnology. Over the past few years, the interdisciplinary study and development sector known as nanostructure science and technology has expanded dramatically. Nanomaterials are typically defined as substances that are smaller than 100 nm in at least one dimension. A nanometer is one millionth of a millimetre in size and has a diameter 100,000 times smaller than a human hair. Because of the unique optical, magnetic, electrical, and other properties that arise at this scale, nanomaterials are of significant interest. These newly discovered qualities have the potential to have significant effects on electronics, medicine, the environment, and sanitation as well as on how effectively water is treated. These particles, which display highly controlled physical, chemical, and biological properties at the atomic and subatomic levels, are generally referred to as nanoparticles (NPs). Yet, due to their distinctive properties, they can be used in a variety of fields, including biology, communications, agriculture, electronics, and optoelectronics. (Eatemadi A, 2014)

Classification of nanomaterials

Nanomaterials can be categorised as zero-dimensional (quantum dots), one-dimensional (quantum wires), two-dimensional (thin films), or three-dimensional (nanostructured mater) depending on the dimension in which the size effect on the resultant property becomes apparent (Table 1).

Table 1: Classification of Nanomaterials

S.No.	Dimensions	Size	Examples
1	3-dimensions	< 100 nm	Nanoparticles, quantum dots
2	2-dimensions	< 100 nm	Nanotubes,nanowires, nanofibers
3	1-dimension	< 100 nm	Thin films, coatings
4	0-dimension	< 100 nm	Semiconductor quantum dots (QDs), nanoparticles and colloidal particles

Due to broad and intense agricultural practises, there has been a noticeable rise in the environmental discharge of some dangerous acute natural pollutants in recent years. The chemical equilibrium of organ phosphorus compounds enables them to penetrate deeper into the soil and reach groundwater. (Azizi S. Mohamad R, 2017)

Moreover, they are sufficiently water soluble and biodegradation-resistant. Considering how long they remain in the environment, many pesticides have high levels of toxicity. Thus, it is crucial to remove these chemically persistent, non-biodegradable pesticide pollutants from contaminated water. Due to its potential to address environmental challenges, broadband semiconducting photocatalysis has attracted the interest of many professionals in recent years.. (Eatemadi A, 2014) (Pês BS, 2014)

Copper Oxide(CuO) is one of the other semiconducting materials that is actively explored because of its special physicochemical, piezoelectric, optical, and catalytic properties. These characteristics are associated with the morphology, size, and shape of CuO nanoparticles. Nanostructures are used in the production of hydrogen, lithium-ion batteries, and bacterial homeostasis. Due to the release of coloured and poisonous effluent into water bodies, dyes, which are widely used in the paper, plastics, textile, and rubber sectors, have severely contaminated the environment. Their toxicity, resistance to natural decomposition, and persistence in the environment have been major sources of worry for societies and regulatory bodies all over the world. The conventional methods for treating dye waste effluents are frequently ineffective, expensive, and non-destructive, or simply shift contamination from one phase of the water cycle to another.

2. REVIEW OF LITERATURE

Synthesis of nanoparticles involves a multidisciplinary technology with different fields of science (biology, chemistry and physics) and engineering research. Different methods have different routes for the synthesis of nanoparticles. Number of physical methods has been reported for the synthesis of nanoparticles but each method has some limitations in which primarily the cost of the instrument is a common hurdle. Secondly, larger space and high energy requirement for set-up of all the experimental conditions are a stumbling block. Chemicals can be used for the effective generation of nanomaterials that are stable in nature. With the development of new chemical methods, the concern for environmental contaminations is also heightened as the chemical procedures involves use of toxic solvents, high energy consumption and large amounts of hazardous byproducts that may create a high risk to the environment and human health. These methods also require capping agents for stabilization of the nanoparticles. Furthermore, the production cost is high and it generates limited shapes of nanoparticles which greatly diminishing their potential properties and applications.

Methods for synthesis:

The top-down approach uses initial macroscopic structures. The methods begin with larger particles which are reduced to nanoparticles after a sequence of operations performed over them. Main shortcomings of these methods are that they involve large installations and hug capital is required for set up. The methods are quite expensive and not suitable for large-scale production. The method is suitable for laboratory experimentation. The approach is based upon the grinding of materials. These methods are not suitable for soft sample. (Pês BS, 2014)

Methods in top-down approach:

1. Physical vapour deposition.
2. Chemical vapour deposition
3. Ion implantation
4. Electron beam lithography
5. X-ray lithography.

Bottom-up approaches of production of nanomaterials comprise the miniaturization of materials constituents to the atomic level with the additional procedure leading to the development of nanostructures. Throughout the further progression, the physical forces working at nanoscale combined simple units into larger stable structures. The methodology is principally based on the principle of molecular recognition (self-assembly). Self-assembly means growing more and more things about one's kind from themselves. Many of these techniques are still under development or are just beginning to be used for the commercial production of nanoparticles

Methods in a bottom-up approach:

1. Sol-gel synthesis
2. Colloidal precipitation
3. Hydrothermal synthesis
4. Organometallic chemical route
5. Electro deposition.

INTRODUCTION TO MANGO

Plant are one of the major groups of living organisms that are an essential entity to the function of the biosphere. Plants can be found in all known parts of the earth in all shapes and sizes. They include the green algae, mosses, ferns, vines, grasses, bushes, herbs, flowering plants and trees although some plants are parasitic, most produce their own food through photosynthesis. Most plants initiate from a seed. The importance of plants in the food chain dates back to ancient times. Plants are one of the two major kingdoms of life forms. They are the only life forms that can produce their own food using energy from sunlight. Plants have green pigment called chlorophyll in their cells, mainly in the leaves. Plants synthesize hundreds of chemical compounds for various functions, including defence against insects, fungi, diseases and herbivorous mammals.

There are many plants are used as a source of drugs by mankind of thousand year. In the Middle Ages, the skills of healing, cultivation of medicinal plants, and preparation of drugs moved to monasteries.

Mangifera indica, commonly known as the mango, is a tropical fruit-bearing tree native to South Asia, specifically the Indian subcontinent. It belongs to the family Anacardiaceae

Description

Tree: Mango trees are large, with a dense, rounded canopy. They can grow up to 35-40 meters (115-130 feet) tall, though they are usually smaller in cultivated orchards.

Leaves: The leaves are simple, evergreen, and arranged alternately. They are lanceolate to oblong and can be up to 30 cm (12 inches) long.

Flowers: The tree produces small, fragrant flowers that are white to yellowish-white. These flowers are borne in large terminal panicles.

Fruit: The mango fruit is a drupe, varying greatly in size, shape, and color. It typically has a fleshy, juicy pulp and a large, flat, fibrous pit. The skin color can range from green to yellow, orange, or red.

DISTRIBUTION

Mangifera indica is native to the Indian subcontinent, specifically India, Bangladesh, and Myanmar. This region is considered the primary center of origin and diversity for the species. The India is the largest producer of mangoes globally, with major growing states including Uttar Pradesh, Andhra Pradesh, Maharashtra, Karnataka, Bihar, Gujarat, and

Tamil Nadu. The country has a vast number of cultivars, adapted to various climatic conditions. And also Mangoes are widely cultivated in countries such as Thailand, the Philippines, Indonesia, and Malaysia. These regions also have a rich diversity of mango varieties. And also it can be used as key agent for development of vaccines and other drug molecules.

CLASSIFICATION OF AZADIRACHTA INDICA

Kingdom: Plantae
Subkingdom: Viridiplantae
Infrakingdom: Streptophyta
Superdivision: Embryophyta
Division: Tracheophyta
Subdivision: Spermatophytina
Class: Magnoliopsida
Superorder: Rosanae
Order: Sapindales
Family: Anacardiaceae
Genus: Mangifera
Species: Mangifera indica

COMPOSITION OF PLANT MATERIALS

Mangifera indica consist of Polyohenols like Mangiferin, Quercetin, Gallic acid, Catechina and Carotenoids like Beta Carotene, Lutein and Zeaxanthin and also Vitamins like Vit-C,E etc., and also in minor quantities they contain triterpenoids like Lupeol and Ursolic acid. And The bioactive compounds in Mangifera indica contribute to various health benefits:

Antioxidant Activity: Protects cells from oxidative damage caused by free radicals.

Anti-inflammatory Effects: Reduces inflammation, which is beneficial in managing conditions like arthritis and other inflammatory diseases.

Anticancer Properties: Certain compounds, like mangiferin and lupeol, have shown potential in inhibiting cancer cell growth.

Antimicrobial Effects: Helps fight against bacterial, viral, and fungal infections.

Antidiabetic Properties: Some compounds can help regulate blood sugar levels.

Cardiovascular Health: Dietary fiber and phytosterols contribute to heart health by maintaining healthy cholesterol levels.

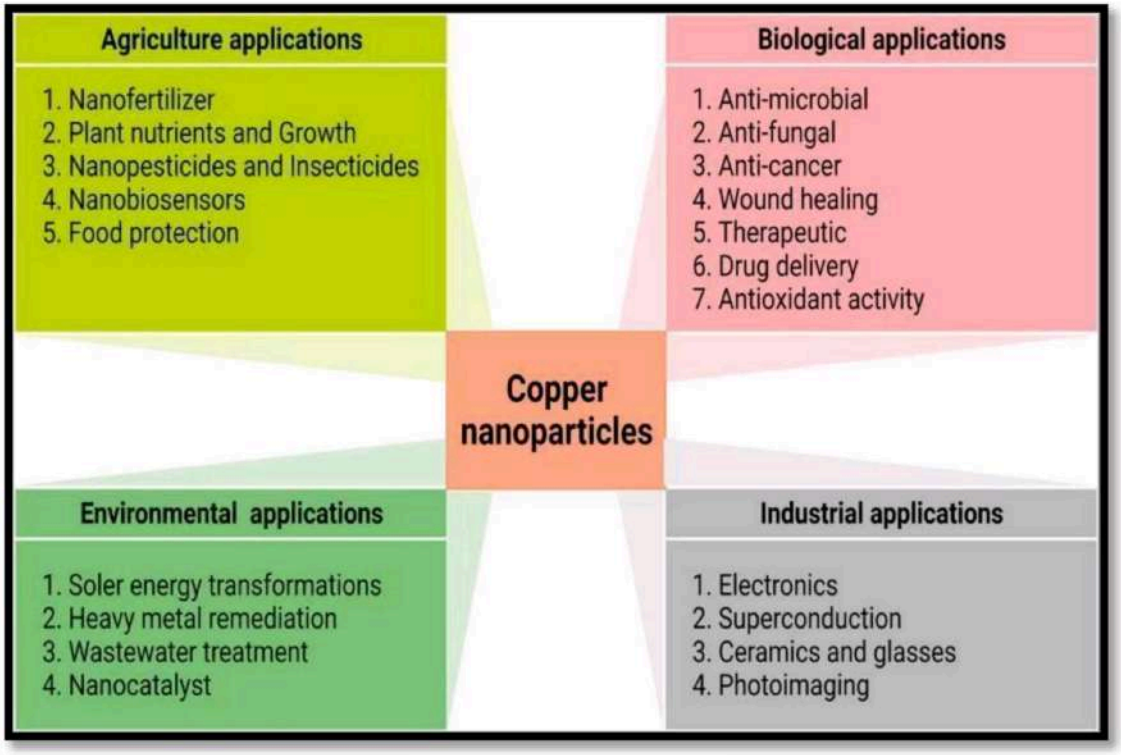
Green synthesis of CuO NPs using plant extract

Copper Oxide Nanoparticles:

Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties.

Therefore, the development of green synthesis of CuO-NPs is advancing as a key branch of nanotechnology where the use of biological entities like plant extract or plant biomass, microorganisms for the generation of NPs could be an alternative to chemical and physical methods in an eco-friendly way. Hence, this project describes the green-inspired synthesis of CuO-NPs hat can provide advantage over the physical and chemical methods. Novel heterogeneous metal oxide semiconductor materials have recently been developed as a promising alternative to conventional wastewater treatment. These materials have drawn significant attention due to their photocatalytic ability in the degradation of various environmental pollutants such as detergents, pesticides, dyes, and volatile organic compounds under UV light irradiation. In contrast to conventional wastewater treatment, these photocatalysts have the ability to transform contaminants into safe compounds while they are still in the wastewater. With CuO being well-known as a non-toxic UV and photoactive material, the use of photocatalysts in the treatment of water pollution has gained increasing

attention. CuO nanoparticle-based composite materials have been thoroughly investigated for their potential to increase CuO efficiency in photocatalysis by metal ion loading, coupling with other metal oxides, and combining with carbonaceous materials. The goal of the current effort is to create zinc oxide nanoparticles utilising a green synthesis method. (Prasad). (Bordbar M) (Bhuyan T. Mishra K. Khanuja M, 2015)



Pharmacological Activities

Antibacterial activity:

The science dealing with the study of the inhibition and treatment of diseases caused by microorganisms is known as medical microbiology. Its sub-disciplines are virology (study of viruses), bacteriology (study of bacteria), mycology (study of fungi), phycology (study of algae) and protozoology (study of protozoa). For the treatment of diseases inhibitory chemicals used to kill bacteria's or inhibit their growth, are called antibacterial agents. The ability of substances to limits or prevent the growth of bacteria's is called antibacterial activity of the material. (Bhuyan T. Mishra K. Khanuja M, 2015)

Antifungal activity:

It is defined as the ability of a substance to limits or inhibits the growth of yeasts and other fungal organisms. Antifungal agents are used to kill or inhibit the further growth of fungi. In medicine, they are employed as a treatment for infections such as athlete's foot, ringworm and thrush and work by exploiting differences between mammalian and fungal cells. They kill off the fungal organism without side effects on the host.

Unlike bacteria, both fungi and humans are eukaryotes. Thus, fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance. Therefore, a greater attention has been paid to antimicrobial activity screening and valuating methods. The antimicrobial activities of nanoparticles have been evaluated using disc diffusion, flow cyto-fluorometric and bioluminescent methods

3. MATERIALS AND METHODS

Materials and Methods

Chemicals

Copper acetate procured from the firm Molychem was used as a precursor for the the synthesis of copper nanoparticles and Nutrient Agar Media for the Antibacterial and Antifungal activity.

Glassware and general apparatus

Conical flasks and Beakers, Volumetric flasks, measuring cylinders, Test tubes, Centrifuge tubes, Hot air Oven, Watch Glass and Hotplate.

Chromic acid wash

Follow all normal safety precautions when using concentrated acids and acid solutions. Acids can severely burn the skin. Dispose of all acids properly. A chromic acid wash has hydrolytic and oxidative capabilities for the chemical decomposition of biological molecules. The acid may also dissolve mineral deposits.

To prepare a chromic acid wash, mix 2 g of sodium or potassium dichromate with sufficient distilled water to make a paste of chromate salt. Add 150ml of concentrated sulphuric acid. Increase the proportions to make larger amounts.

Mango *(Mangifera indica)* leaf extract preparation:

Fresh leaves of Mango *(Mangifera indica)* were collected. The collected leaves were thoroughly washed several times using deionized distilled water, air-dried and chopped finely into small pieces. Twenty grams of chopped leaves were taken in pestle and mortar. Leaf extract was prepared by weighing 20g of fine powder with 200 ml of double distilled water boiled at 60°C in Erlenmeyer flask for 20 min. The Mango *(Mangifera indica)* leaf extract was then filtered through Whatman No.1 filter paper. The filtered was used for the synthesis of nanoparticles in room temperature.

Preparation of 100 ml aqueous $CuCH_3COO_2$ (0.1M) solution

Copper Acetate $CuCH_3COO_2$ procured from the firm Molychem was used as a precursor for the synthesis of Copper nanoparticles. 1.81 gms of $CuCH_3COO_2$ was dissolved in 100 ml of deionized water for use in further experiments.

Green Synthesis of Copper Oxide Nanoparticles using Mango *(Mangifera indica)* plant leaf extract:

In this experiment, the above prepared 100ml of 0.1M solution of Copper Acetate ($CuCH_3COO_2$) was taken in a 250ml glass beaker and stirred it for 30 minutes at room temperature. After that, a solution of 25 ml of Mango *(Mangifera indica)* plant leaf extract was added to the first solution under magnetic stirring. The solution temperature was maintained at 60°C for 4 hours with continuous stirring. The stirred process was complete process in precipitation was recognized by the brown colour colloidal particles at the bottom of the flask.

After the completion of the reaction, it is formed brown coloured precipitate was allowed to settle for one day. The precipitate was separated from this solution by centrifugation at 1000 rpm for 10 minutes and washed with water repeatedly and to remove the impurities then dried in hot air oven 80°C for overnight to yield CuO nanoparticles. The dried sample was grinded and crushed. The synthesis steps demonstrated in Fig.1. The grinded sample was stored at room temperature in airtight container for further characterization.

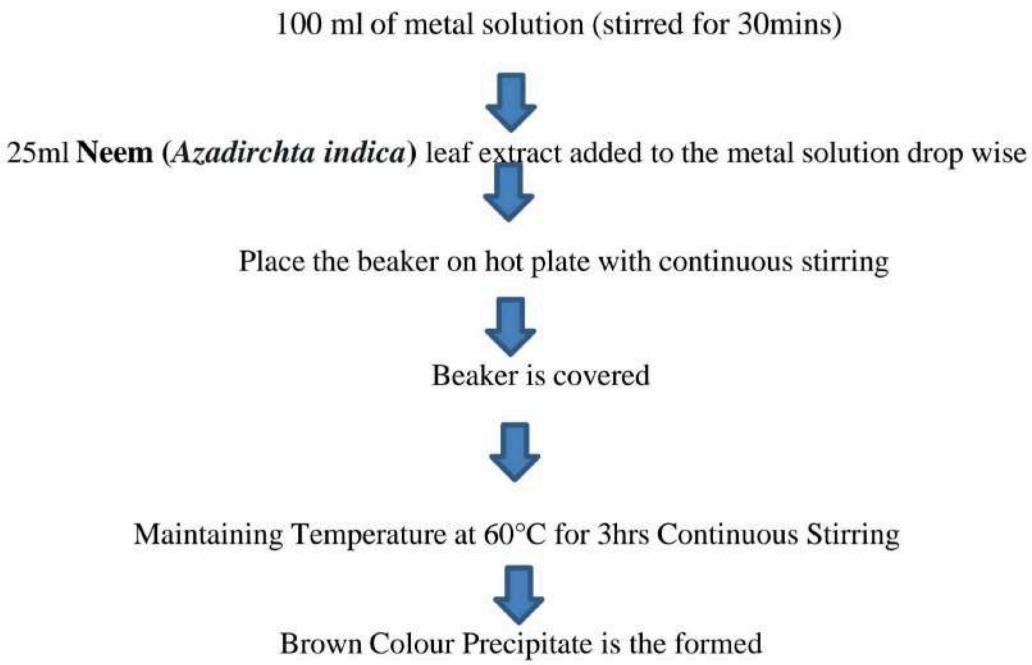


Figure 1: Flow chart for the preparation of CuO Nano Particles

Antimicrobial activity of CuO-NPs

Biogenically synthesized CuO-NPs also have shown antimicrobial activity against wide range of microbes. In this section we have discussed antimicrobial activity of CuO-NPs, Most of the bacteria and pathogenic fungi are harmful for environment, agriculture, and living organisms. The antibacterial character of CuO-NPs against pathogenic fungi and bacteria is due to change in the cell permeability when the plasma membrane of bacterial cell comes in contact with CuO-NPs. This is due to the reason that CuO-NPs move to the cytoplasm and affect the normal functioning of cell resulting in the formation of zone of inhibition against the microbes. Further, CuO-NPs damage the cell membrane which results in the death of bacteria. This can be explained by the mechanism that oxygen species are released on the surface of NPs

that react with hydrogen to produce hydrogen peroxide. The generated hydrogen peroxide either stops the growth of bacteria or kills the bacteria.

The bacterial cell membrane disruption takes place by CuO-NPs, due to formation of superoxide and hydroxyl radicals. The zone of inhibition directly proportional to the antibacterial activity of NPs, but inversely proportional to the size of CuO-NPs. Hence, as the size of NPs decreases, higher is the zone of inhibition and greater is the antibacterial action. The formation of hydrogen peroxide is related to the size and surface area of synthesized NPs. Smaller the CuO-NPs and larger the surface zone per unit area, greater is the formation of oxygen species and higher is the formation of hydrogen peroxide. The antibacterial activity has also been found to depend upon the shape of nanoparticles, type of synthesis and concentration of the CuO-NPs

Antifungal activity:

fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance.,

Antioxidant activity:

An limitation of the oxidation of proteins , lipids , DNA or other molecules that occurs by blocking the propagation stage in oxidative chain reactions .Antioxidants keep reactive oxygen species at low concentration , avoiding oxidative damages while allowing them to play crucial functions in signal transduction.Mangiferin, being a polyphenolic antioxidant and a glucosyl xanthone, it has strong antioxidant, anti lipid peroxidation, immunomodulation, cardiotonic, hypotensive, wound healing, antidegenetive and antidiabetic activities.

Leaves of the mango plant have been studied for their health benefits, which are attributed to a plethora of phytochemicals such as mangiferin, followed by phenolic acids, benzophenones, and other antioxidants such as flavonoids, ascorbic acid, carotenoids, and tocopherols.

Flavonoids are also powerful antioxidant agents. Antioxidants helps your body fight off potentially harmful molecules that can be introduced to the body.The extracts from mango leaves have been studied for their biological activities including anti-cancer, anti-diabetic, anti-oxidant, anti-micronial, anti-obesity, lipid-lowering,hepato-protection,and anti-diarrheal.

Instruments Used:

MAGNETIC STIRRER WITH HOT PLATE:

Magnetic stirrers are widely used in scientific experiments and industrial production. In addition to their excellent stirring performance, they also have the advantage of being easy to use and clean. Stirring is utilized to produce uniform mixes and improve those mixers. A chemical reaction occurs when liquid or liquid-like substances interact with one another. This reaction causes the substances to aggregate. Mixing equipment is used in most vessels that need to be stirred. The way they're designed, as well as the mixing gear, impact how effectively they combine the components. Magnetic stirring is a process you can use to stir liquids in open and closed systems. This process can be performed under pressure or vacuum over a wide temperature range. Additionally, magnetic stirring can be used with any chemical substance.

Uses:

Magnetic stirrers are used to mix fluids rapidly of various viscosities. They're most often seen in laboratories studying biology and chemistry. Magnetic stirrers are utilized in a variety of applications.

Working:

A magnetic stirrer, often known as a Magnetic mixer, is a machine that mixes ingredients by attracting like charges and repulsing dissimilar ones. A magnetic stirrer uses a rotating magnetic field to stir a non-magnetic liquid in a container. The rotating field is created by a magnet mounted on the stirrer underneath the container. As the magnet rotates, it creates a rotating magnetic field that extends into the liquid.

WEIGHING BALANCE:

A weighing balance is a laboratory instrument that is used to measure the mass or weight of an object. They are commonly used in analytical and research laboratories, as well as in the pharmaceutical and chemical industries, where precise measurements are critical. Weighing balances are also used in commercial settings such as in food processing, jewellery making, and shipping.

A typical weighing balance consists of a platform or pan on which the object being measured is placed, and a beam or sensor that detects the weight of the object. The beam or sensor is

connected to a display unit that shows the weight in the desired units, such as grams, milligrams, or ounces.

There are three main types of weighing balances:

- Mechanical balances: measure weight using physical components such as levers and counterweights.
- Analytical balances: These are highly accurate and sensitive balances that can measure weight to within a few thousandths of a gram.
- Digital balances: These balances use electronic sensors to measure weight and digitally display results.

Weighing Balance principle: The principle behind weighing balances is based on the concept of balance of weight. This means that the weight of an object is balanced against a known weight, such as a set of calibrated weights until equilibrium is reached. The balance then displays the weight of the object being measured. In conclusion, weighing balances are essential tools in laboratory and industrial settings where accurate and precise measurements are critical. They come in different types and models, each with its own unique features and capabilities

HOT AIR OVEN:

A hot air oven is a type of dry heat sterilization. Dry heat sterilization is used on equipment that cannot be wet and on material that will not melt, catch fire, or change form when exposed to high temperatures. Moist heat sterilization uses water to boil items or steam them to sterilize and doesn't take as long as dry heat sterilization. Examples of items that aren't sterilized in a hot air oven are surgical dressings, rubber items, or plastic material.

Items that are sterilized in a hot air oven include:

- Glassware (like petri dishes, flasks, pipettes, and test tubes)
- Powders (like starch, zinc oxide, and sulfadiazine)
- Materials that contain oils
- Metal equipment (like scalpels, scissors, and blades)

Principle: Hot air ovens use extremely high temperatures over several hours to destroy microorganisms and bacterial spores. The ovens use conduction to sterilize items by heating

the outside surfaces of the item, which then absorbs the heat and moves it towards the centre of the item.

The commonly-used temperatures and time that hot air ovens need to sterilize materials is 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.

AUTOCLAVE:

An autoclave is a moist heat sterilizer as the Moist heat sterilization uses water to boil items or steam them to sterilize with specified pressure. Most of the growth mediums and pipette tips and other biological medias are generally preferred for moist heat sterilization.

Principle: Autoclave works under the principle of Moist Heat Sterilization as it uses high pressure and high temperature for longer periods to sterilize the biological medias and other compounds inorder to kill the bacteria and other microorganisms. Generally the autoclave is maintained at 121°C at 15lbs pressure for 1 Hour

Incubator:

Principle: It depends on the principle of thermoelectricity. The incubator has a thermostat which maintains a constant temperature by creating a thermal gradient. For most the organisms 37°C is the favourable temperature while yeast organisms require 30°C.

LAMINAR AIR FLOW CHAMBER:

Principle: It is an enclosed workstation that is used to create a contamination free work environment through filters to capture all the particles entering the cabinet. These are the most useful for the aseptic cabinets the effluent air is drawn into the face of the user.

In a biosafety cabinet, both the sample and user are protected while in the laminar flow cabinet, only the sample is protected and not the user. Laminar flow cabinets are similar to bio safety cabinets with the only difference being that in laminar flow cabinets the effluent air is drawn into the face of the user.

Micropipette:

A micropipette is a common essential laboratory instrument used to accurately and precisely transfer volumes of liquid in the microliter range. Micropipettes are available in single channel and multi-channel variants.

- All the other chemicals are procured from Qualizens limited.
- For all the assays the Millipore degraded distilled water has been used.

Characterization of ZnO nanoparticles:

FTIR analysis

The chemical composition of the synthesized magnesium nanoparticles was studied by using FTIR spectrometer (Perkin-Elmer LS-55- Luminescence spectrometer). The solutions were dried at 750°C and the dried powders were characterized in the range 4000–400 cm -1 using KBr pellet method

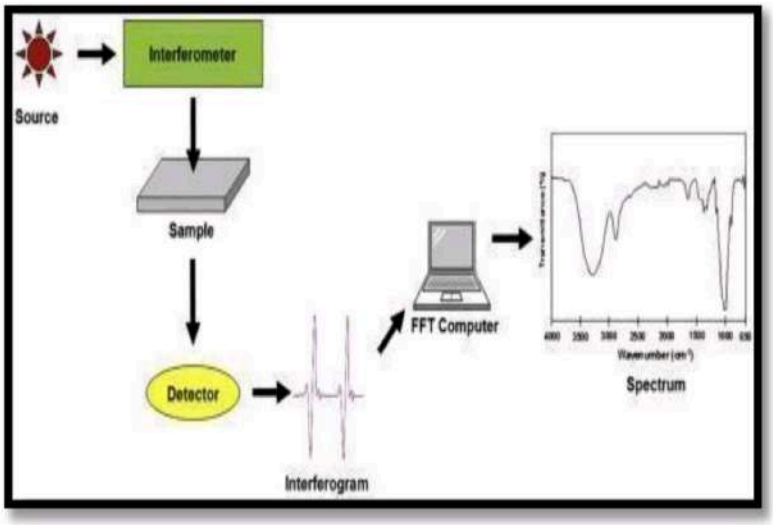


Figure 2: FTIR Instrumentation analysis

XRD Analysis

The phase variety and grain size of synthesized silver nanoparticles was determined by X-ray diffraction spectroscopy (Philips PAN analytical). The synthesized silver nanoparticles were studies with CUKα radiation at voltage of 30 kV and current of 20 MA with scan rate of 0.030 /s. Different phases present in the synthesized samples were determined by X′ pert high score software with search and match facility. The particle size of the prepared samples was determined by using Scherrer′s equation as follows

$$D \approx 0.9\lambda / \beta \cos\theta$$

Where D is the crystal size, λ is the wavelength of X-ray, Θ is the Braggs angle in radians and B is the full width at half maximum of the peak in radians

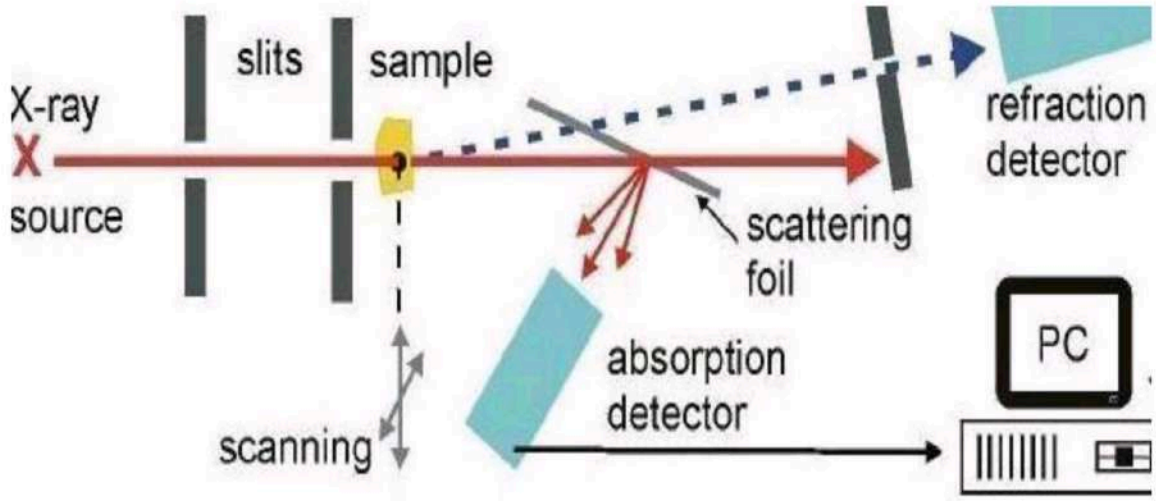


Figure 3: XRD Instrumentation analysis

SEM (Scanning Electron Microscope)

Scanning electron microscopy (SEM) analysis was carried out using Carl Zeiss Japan, Inodel machine. Thin film of nanoparticle powder sample was prepared on carbon coated tape by adhering small amount of dried fine powder of sample on the grid, excess sample was removed with the help of blotting paper. The film on the SEM grid was allowed to dry by putting it under a mercury lamp for 5 min. The SEM analysis was used to determine the surface structure of biologically synthesized CuO-NPs.

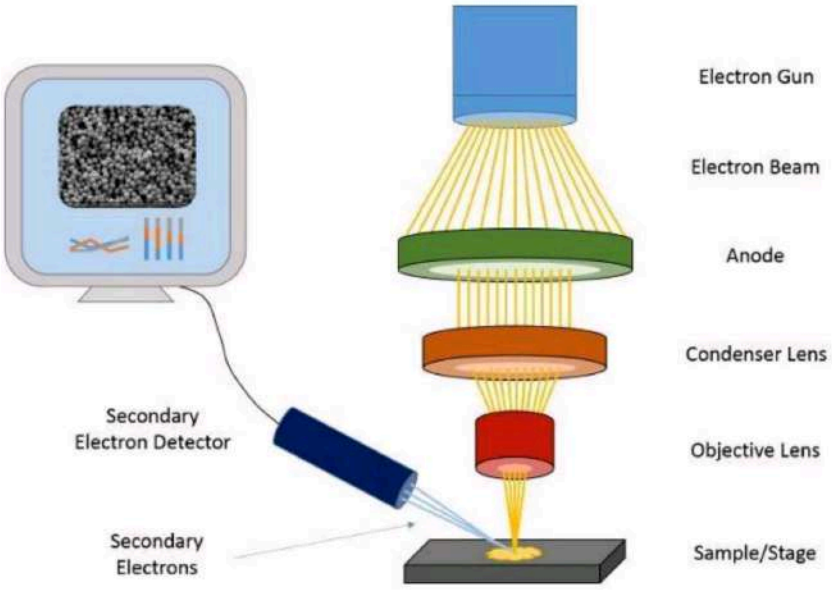


Fig.4: SEM Analysis depict

4.RESULTS AND DISCUSSION

Green Synthesis of Cupper Oxide Nanoparticles using Mango *(Mangifera indica)*:

Cupper Oxide nanoparticles were synthesized successfully by the green synthesis method using Mango *(Mangifera indica)* leaf extracts. During exposure to leaf extracts, reduction of Copper ions into copper nanoparticles was observed as a result of the colour change from pale Brown colour to biscut colour. In this method the aqueous leaf extract acts as a solvent with manifold roles as promoter, stabilizer and template for the synthesis of nanoparticles.

Characterization of CuO nanoparticles: Copper oxide nanoparticles obtained were preserved in plastic vials for further characterization. Characterization studies needed to study the exact size, shape and other properties of CuO nanoparticles. In this work I have used XRD and FTIR and SEM analysis to study the CuO nanoparticles.

FT-IR analysis:

To identify the key factors for the copper ion (Cu+) reduction into copper nanoparticles (Cu-NPs), FTIR spectroscopy analyses were carried out. FT-IR analyses show the shifts in the absorbance peak of copper nanoparticles with different points ranging from 561 to 3390cm^{-1} as shown in (Fig. 7). It is evident that there is presence of functional groups such as alkaloids, phenols,halo compounds, and primary and secondary amines in the extract. The IR spectrum of the biosynthesized Cu-NPs showed the peak value at 561, 600, 679, 1360, 1644, and 3390cm^{-1}. The peak value 561 cm^{-1} relates to the Cu-O bond in the CuO nanostructure group. A peak at 600$cm^{-1}$and 679cm^{-1} relates to the C-I stretch and C-Cl bond in halo compound group. The peak at 1350cm^{-1} was assigned to be C-H bend in the methane group, 1644cm^{-1} relates to

the C-C stretch in the aromatic group and peak at 3390cm^{-1} O-H stretch in the primary and secondary amide group. The peaks corresponding to O–H, C=O, C–N, C–H, C=C are the prominent peaks associated with CuO- NPs. Several scientific findings had ascribed the absorption at 3000–3350 cm^{-1} to N–H of amine or O–H of alcohol/phenol. Absorption peaks in the range of 820–880 cm^{-1} have been attributed to aromatic C–H bending. A strong absorption peak at wavelength 2900-3000cm^{-1} was credited to C–H. The absorption band observed at wavelength 1600–700 is traceable to CuO. The absorption band at 1600–1790 are linked to –C=O of carbonyl.

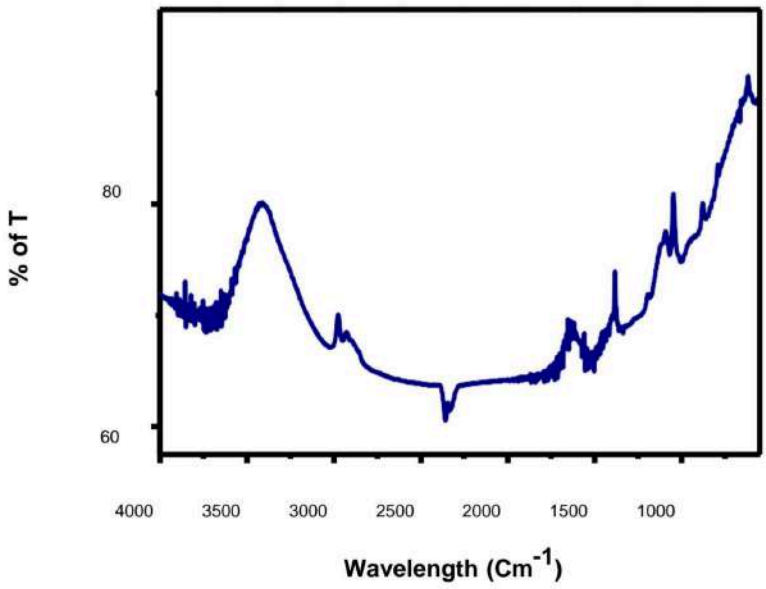


Fig. 7: FTIR analysis of Cu-NPs

XRD Analysis:

XRD technique which is used for the phase determination of crystal structures of the nanoparticles. The XRD analysis of the synthesised particles show characteristic diffraction peaks at 2θ of 32.37, 35.19, 38.49, 48.14, 58.01, 61.31, 66.01, 67.66, 72.37 and 75.19, which were assigned to (110), (11-1), (111), (20-2), (202), (113), (022), (220), (31-2) and (004) planes respectively. From the analysis by XRD, the monoclinic structure of CuO NPs prepared from *Azadirachta indica* leaf extract was suggested. The monoclinic structure of CuO, so obtained, is then confirmed by comparison with the data provided in MATCH! Software [card no. 96-901-5925] and the cell parameter of the synthesised particle is 4.6832 A°. All the diffraction peaks corresponds to typical monoclinic structure and no other phase was observed. The average crystallite size of CuO nanoparticles was calculated using the Scherrer formula, D=0.9 λ/β cosθ, where λ is the wavelength of X-ray radiation, β is the full width at half maximum

(FWHM) of the peaks at the diffracting angle θ. It was found to be 25 nm indicating its crystalline nature.

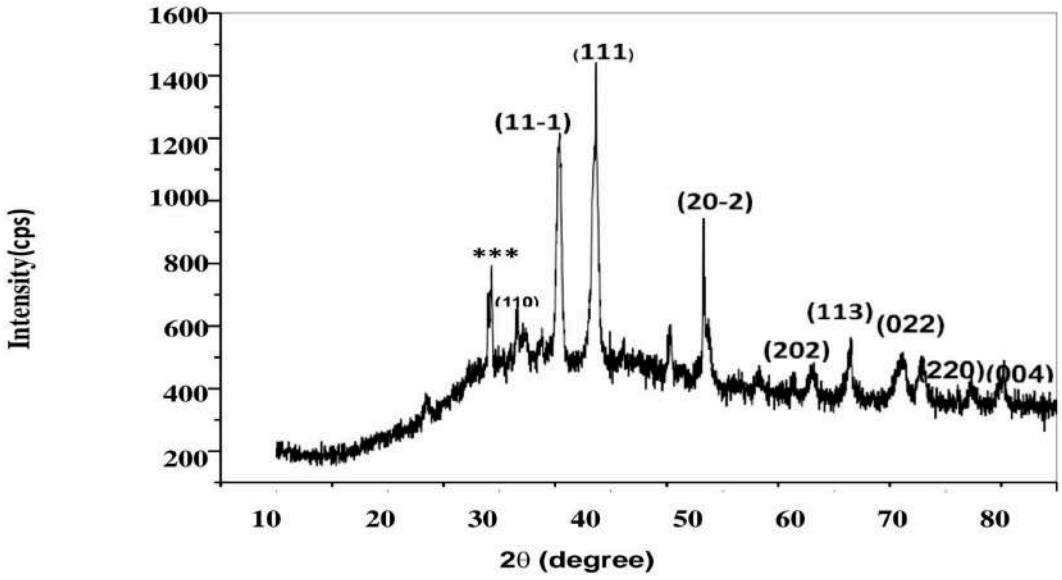


Fig. 8. X-ray diffraction of synthesized CuO NPs

SEM analysis:

The technique of scanning electron microscopy is used to visually examine a surface in order to identify contaminants or unidentified particles. For morphological data and particle characterization, SEM analysis is used. The SEM pictures were seen at various magnification settings between 2 nm and 200 nm. The produced nanoparticles were spherical in form and ranged in diameter from 33.6 to 120 nm on average. The biosynthesized CuO NPs produced by Lippia adoensis were reported to have a spherical shape and nanorodshaped structures by (Vinay et al., 2018) using SEM and TEM. According to investigation of P. niruri leaf extract revealed a colour change from pale white to brown and a cylindrical morphology with an average size of 5 nm (Demissie et al., 2020). SEM pictures of produced copper oxide nanoparticles that were aggregated and had particle sizes between 100 and 200 nm (Tahseen Ali Ibrahim et al., 2021).

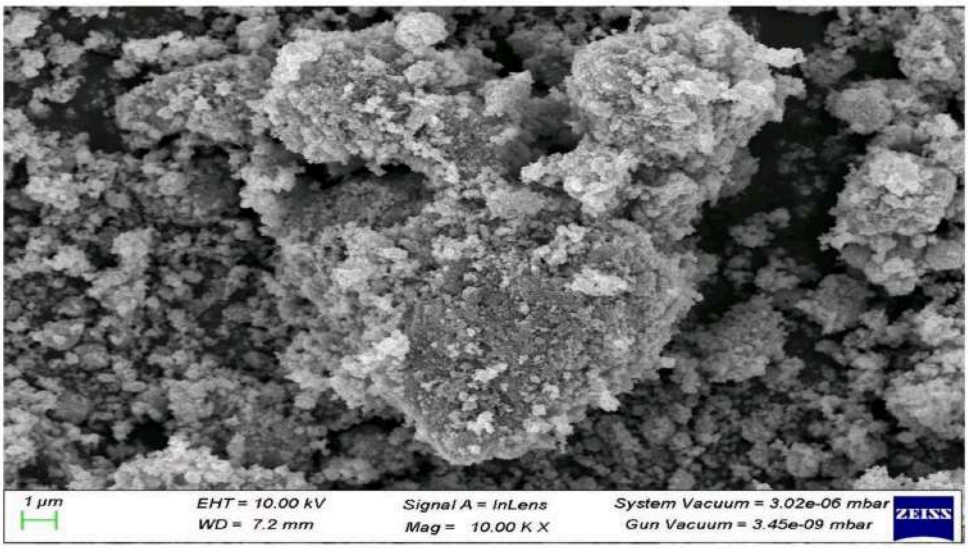


Fig: SEM Image of CuO-NPs

Antimicrobial activity of CuO-NPs:

The antimicrobial property of CuO-NPs towards Gram-positive and Gram-negative bacteria and fungi was tested using the agar well diffusion method. CuO-NPs produced using the green method had strong antibacterial activity against all microbes at concentrations of 800, 600, and 400 µg/ml, demonstrating that the dose depends on the mechanism. When the concentration of CuO-NPs against test pathogens increased, so did their antibacterial activity. CuO-NPs had the highest antibacterial activity of 21mm against *Enterobacter faecalis* at a concentration of 600 µg/mL. It was decided to investigate the antibacterial activity using the well-diffusion method. The strong interaction between silver and the thiol groups found in essential bacterial respiratory enzymes may be the cause of the inhibitory effect of silver compounds.(Dinesh et al., 2022)

S.NO	Test organisms	Zone of inhibition(mm)			
		CuO-NPs (µg/mL)			
		100	50	10	Positive control (Amoxicillin) 100 µg/mL
1	*Enterobacterfaecilus*	22	20	19	23
2.	*E.Coli*	23	15	10	23
3.	*Candida*	10	-	-	15

Fig.13: Antibacterial activity of CuO-NPs against *Enterobacter faecilus and E.Coli*

Fig.14: Antifungal activity of CuO-NPs against Candida

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

REDDY HARSHITHA DEVI

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VISHNU
UNIVERSAL LEARNING

UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

BECS

4. Conclusions and Recommendations:

Nanotechnology finds extensive applications in nanomedicine, an emerging new field. Nanoparticles can be synthesised by chemical and physical methods but these methods are quite expensive and toxic Use of biological organisms, plant extracts could be an alternative method for production of nanoparticles. The present study reports a green, eco-friendly and cost-effective approach for the synthesis of zinc oxide nanoparticles, using the Mango*(Mangifera indica)* leaf extract, which acts as a reducing and stabilizing agent . We have also studied the characterization of CuO nanoparticles. FTIR results proved that bioactive compounds responsible for Copper bioreduction could be proteins and flavonoids presumed to act as reducing and capping agents for the Copper nanoparticles preventing the agglomeration of the particles and thereby stabilizing the nanoparticles. The synthesized nanoparticles are then characterized by using (X-ray diffraction) XRD technique and it is found that the size of particles is about 45 nm. Also, the synthesized nanoparticles exhibit crystalline nature. This method offers a biological technique to synthesize CuO nanoparticles in controlled and precise manner with well-defined diverse sizes and shapes. This study also suggests that green synthesized method can be used as an alternative to the existing chemical and physical methods. More research is needed to shed light on deducing additional details and discerning a more accurate interpretation of the results obtained.

In conclusion green synthesis of CuO-NPs is much more safer and environment friendly than physical and chemical methods. CuO-NP's find application as antimicrobial agent and photocatalyst. The plant based CuO-NPs can become a major field of research and can be used extensively in the food, pharmaceuticals and cosmetic industries. The potential applications of CuO-NPs as Antimicrobial agent as well as antifungal agent.

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Tulasi (Ocimum Sanctum) based Copper oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

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Submitted to

VISHNU
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DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

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The overall performance of the internship during her dissertation is found to be Satisfactory

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ocimum sanctum (Holy Basil) based Copper oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

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DECLARATION

I, PAKALAPATI ASRITHA , student of Bachelor Science Program with Reg. No.213117121280 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

P. Asritha

Signature of student

PAKALAPATI ASRITHA

ACKNOWLEDGMENT

I would like to thank **Dr. B. Satish Mohan sir, Managing Director** of Bio Enviro Chemical Solutions for giving us this wonderful opportunity for the 3 Month Apprenticeship in their institution.

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I am highly indebted to **Dr. P. Seetharam, BECS** for his guidance and constant supervision as well as for providing necessary information regarding the project and for their support in completing the project. His constant guidance and willingness to share his vast knowledge made us understand this project and its manifestations in great depths and helped us to complete the assigned tasks on time.

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I would like to extend my sincere thanks to all my faculty advisors and especially my mentor, **E. A. V. V. Rambabu. M, Head of the Department of Life sciences,** B V Raju college for his timely guidance and constant supervision.

It has been great honour and privilege to undergo training at Bio Enviro Chemical Solutions

I would like to express my gratitude towards my parents for their kind cooperation and encouragement which help me in completion of this project.

Signature of student

PAKALAPATI ASRITHA

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1. INTRODUCTION

Nanomaterials are the basis of nanoscience and nanotechnology. Over the past few years, the interdisciplinary study and development sector known as nanostructure science and technology has expanded dramatically. Nanomaterials are typically defined as substances that are smaller than 100 nm in at least one dimension. A nanometer is one millionth of a millimetre in size and has a diameter 100,000 times smaller than a human hair. Because of the unique optical, magnetic, electrical, and other properties that arise at this scale, nanomaterials are of significant interest. These newly discovered qualities have the potential to have significant effects on electronics, medicine, the environment, and sanitation as well as on how effectively water is treated. These particles, which display highly controlled physical, chemical, and biological properties at the atomic and subatomic levels, are generally referred to as nanoparticles (NPs). Yet, due to their distinctive properties, they can be used in a variety of fields, including biology, communications, agriculture, electronics, and optoelectronics. (Eatemadi A, 2014)

Classification of nanomaterials

Nanomaterials can be categorised as zero-dimensional (quantum dots), one-dimensional (quantum wires), two-dimensional (thin films), or three-dimensional (nanostructured mater) depending on the dimension in which the size effect on the resultant property becomes apparent (Table 1).

Table 1: Classification of Nanomaterials

S.No.	Dimensions	Size	Examples
1	3-dimensions	< 100 nm	Nanoparticles, quantum dots
2	2-dimensions	< 100 nm	Nanotubes, nanowires, nanofibers
3	1-dimension	< 100 nm	Thin films, coatings
4	0-dimension	< 100 nm	Semiconductor quantum dots (QDs), nanoparticles and colloidal particles

Due to broad and intense agricultural practises, there has been a noticeable rise in the environmental discharge of some dangerous acute natural pollutants in recent years. The chemical equilibrium of organ phosphorus compounds enables them to penetrate deeper into the soil and reach groundwater. (Azizi S. Mohamad R, 2017)

Moreover, they are sufficiently water soluble and biodegradation-resistant. Considering how long they remain in the environment, many pesticides have high levels of toxicity. Thus, it is crucial to remove

these chemically persistent, non-biodegradable pesticide pollutants from contaminated water. Due to its potential to address environmental challenges, broadband semiconducting photocatalysis has attracted the interest of many professionals in recent years. Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties(Eatemadi A, 2014) (Pês BS, 2014).

Applications of copper nanoparticles

Cu-NPs have diverse scientific applications. They are very effective against different pathogenic microbes. A high concentration of Cu-NPs generates reactive oxygen species in bacterial cells which eventually cause cell lysis. Moreover, Cu-NPs have exhibited anticancer and antifungal activities. Due to their antimicrobial activity, it is also used for food preservation and agricultural field to draw protection against different pathogenic fungi and bacteria. Copper-based nano fertilizer and nano- insecticides promote growth and nutrients in crop plants. Copper-based bioremediation plays a pivotal role in waste-water treatment and removal of heavy metals from soil. Copper is a good conductor of electricity hence it is used as a super-conductor and has a significant contribution to the modern electronic field. In the following figure, we have summarized the different applications of Cu-NPs and also elaborate its major application in the following context.

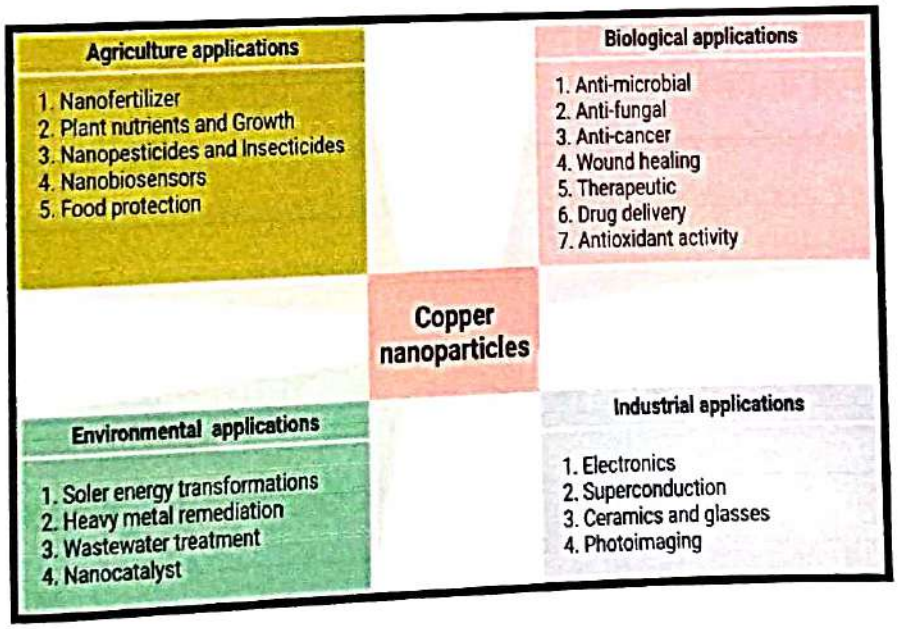


Fig. 2: Applications of copper nanoparticles

2. REVIEW OF LITERATURE

Synthesis of nanoparticles involves a multidisciplinary technology with different fields of science (biology, chemistry and physics) and engineering research. Different methods have different routes for the synthesis of nanoparticles. Number of physical methods has been reported for the synthesis of nanoparticles but each method has some limitations in which primarily the cost of the instrument is a common hurdle. Secondly, larger space and high energy requirement for set-up of all the experimental conditions are a stumbling block.

Chemicals can be used for the effective generation of nanomaterials that are stable in nature. With the development of new chemical methods, the concern for environmental contaminations is also heightened as the chemical procedures involves use of toxic solvents, high energy consumption and large amounts of hazardous byproducts that may create a high risk to the environment and human health. These methods also require capping agents for stabilization of the nanoparticles. Furthermore, the production cost is high and it generates limited shapes of nanoparticles which greatly diminishing their potential properties and applications.

Methods for synthesis:

The top-down approach uses initial macroscopic structures. The methods begin with larger particles which are reduced to nanoparticles after a sequence of operations performed over them. Main shortcomings of these methods are that they involve large installations and hug capital is required for set up. The methods are quite expensive and not suitable for large-scale production. The method is suitable for laboratory experimentation. The approach is based upon the grinding of materials. These methods are not suitable for soft sample. (Pês BS, 2014)

Methods in top-down approach:

1. Physical vapour deposition.
2. Chemical vapour deposition.
3. Ion implantation.
4. Electron beam lithography.
5. X-ray lithography.

Bottom-up approaches of production of nanomaterials comprise the miniaturization of materials constituents to the atomic level with the additional procedure leading to the development of nanostructures. Throughout the further progression, the physical forces working at nanoscale combined simple units into larger stable structures. The methodology is principally based on the principle of molecular recognition (self-assembly). Self-assembly means growing more and more things about one's kind from themselves. Many of these techniques are still under development or are just beginning to be used for the commercial production of nanoparticles

Methods in a bottom-up approach:

1. Sol-gel synthesis
2. Colloidal precipitation
3. Hydrothermal synthesis
4. Organometallic chemical route
5. Electro deposition.

INTRODUCTION TO TULASI

In ethno- botanical literature of India, several hundreds of plants are known to have the potential to treat many diseases. Among them the most popular ones is Tulasi traditionally used for the treatment of diseases. The Tulsi plant is known as "The mother medicine of Nature " and "The Queen of Herbs". For the docking studies, the chosen plant species is Ocimum tenuiflorum, which is also known as Ocimum sanctum. The common name of Ocimum tenuiflorum is "Krishna tulsi"

DISTRIBUTION:

Ocimum tenuiflorum is native to India, Iran and now cultivated in Egypt, France, Hungary, Italy, Morocco, USA. Basil is naturally found wild in the tropical and subtropical regions of the world. Basil thrives in warm and temperate climates. Basil is an aromatic, low growing herb the leaves of which have a bright green to purple ovate colour, and is grown in warm, tropical climate. Basils are native to tropical Asia and are likely to have originated in India. It is an annual plant, usually propagated through seeds. It is widely distributed in tropical areas and can be easily found at an altitude of 1800 meters in Himalayan region (shinde, 2014)

TAXONOMIC STUDY

It is a much-branched small herb and 30 to 75 cm in height. All parts of Tulasi are used in medicine, especially fresh and dried leaves. Leaves are oblong, acute with entire or serrate margin, pubescent on both sides and minutely gland dotted. The leaves are green in color with aromatic flavor and slightly pungent taste. Flowers are purplish in color in the form of racemes. Nutlets are subglobose, slightly compressed, pale brown or red in color. Seeds are reddish black and subglobose. Leaves have petioles and are ovate, up to 5 cm long, usually slightly toothed. The flowers are purplish in elongate racemes in close whorls. The two main morphotypes cultivated in India and Nepal are green-leaved (Sri or Lakshmi tulasi) and purple-leaved (Krishna tulasi) (Kumar, 2018)

BOTANICAL CLASSIFICATION:

Domain: Eukaryota
Kingdom: Plantae
Phylum: Spermatophyta
Sub-phylum: Angiospermae
Class: Dicotyledonae
Order: Lamiales
Family: Lamiaceae
Genus: Ocimum
Species: tenuiflorum

THERAPEUTIC USES:

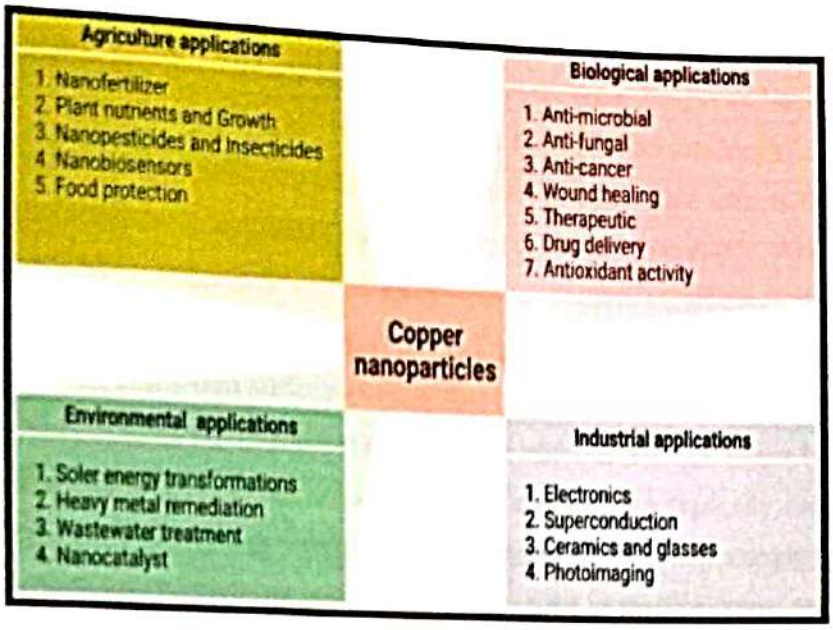
The Holi basil is the most sacred plant and it is mentioned in Charaka Samhita and Susruta Samhita, as every part of plant has its own medicinal properties. This immortal plant is the most sacred plant in Hindu religion, which contains in itself every perfection, cures every ill, and purifies and guides to the heavenly paradise those who worship it. These studies reveal that tulasi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti- oxidant, anti-cataract, anti-inflammatory, chemopreventive, radio protective, hepato protective, neuro-protective, cardio-protective, anti-diabetic, anti-hypercholesterolemia, anti-hypertensive, anti-carcinogenic, analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant, memory enhancement, anti- asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritic, adaptogenic, anti-stress, anti- cataract, anti-leukodermal and anti-coagulant activities (MM, 2014) (Chanthaboury M, 2022)

Green synthesis of CuO NPs using plant extract

Copper Oxide Nanoparticles:

Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties.

Therefore, the development of green synthesis of CuO-NPs is advancing as a key branch of nanotechnology where the use of biological entities like plant extract or plant biomass, microorganisms for the generation of NPs could be an alternative to chemical and physical methods in an eco-friendly way. Hence, this project describes the green-inspired synthesis of CuO-NPs hat can provide advantage over the physical and chemical methods. Novel heterogeneous metal oxide semiconductor materials have recently been developed as a promising alternative to conventional wastewater treatment. These materials have drawn significant attention due to their photocatalytic ability in the degradation of various environmental pollutants such as detergents, pesticides, dyes, and volatile organic compounds under UV light irradiation. In contrast to conventional wastewater treatment, these photocatalysts have the ability to transform contaminants into safe compounds while they are still in the wastewater. With CuO being well-known as a non-toxic UV and photoactive material, the use of photocatalysts in the treatment of water pollution has gained increasing attention. CuO nanoparticle-based composite materials have been thoroughly investigated for their potential to increase CuO efficiency in photocatalysis by metal ion loading, coupling with other metal oxides, and combining with carbonaceous materials. The goal of the current effort is to create zinc oxide nanoparticles utilising a green synthesis method. (Prasad). (Bordbar M) (Bhuyan T. Mishra K. Khanuja M. 2015)



Pharmacological Activities

Antibacterial activity:

The science dealing with the study of the inhibition and treatment of diseases caused by microorganisms is known as medical microbiology. Its sub-disciplines are virology (study of viruses), bacteriology (study of bacteria), mycology (study of fungi), phycology (study of algae) and protozoology (study of protozoa). For the treatment of diseases inhibitory chemicals used to kill bacteria's or inhibit their growth, are called antibacterial agents. The ability of substances to limits or prevent the growth of bacteria's is called antibacterial activity of the material. (Bhuyan T. Mishra K. Khanuja M, 2015)

Antifungal activity:

It is defined as the ability of a substance to limits or inhibits the growth of yeasts and other fungal organisms. Antifungal agents are used to kill or inhibit the further growth of fungi. In medicine, they are employed as a treatment for infections such as athlete's foot, ringworm and thrush and work by exploiting differences between mammalian and fungal cells. They kill off the fungal organism without side effects on the host.

Unlike bacteria, both fungi and humans are eukaryotes. Thus, fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance. Therefore, a greater attention has been paid to antimicrobial activity screening and valuating methods. The antimicrobial activities of nanoparticles have been evaluated using disc diffusion, flow cyto-fluorometric and bioluminescent methods

3. MATERIALS AND METHODS

Materials and Methods

Chemicals

Copper acetate procured from the firm Molychem was used as a precursor for the synthesis of copper nanoparticles and Nutrient Agar Media for the Antibacterial and Antifungal activity.

Glassware and general apparatus

Conical flasks and Beakers, Volumetric flasks, measuring cylinders, Test tubes, Centrifuge tubes, Hot air Oven, Watch Glass and Hotplate.

Chromic acid wash

Follow all normal safety precautions when using concentrated acids and acid solutions. Acids can severely burn the skin. Dispose of all acids properly. A chromic acid wash has hydrolytic and oxidative capabilities for the chemical decomposition of biological molecules. The acid may also dissolve mineral deposits.

To prepare a chromic acid wash, mix 2 g of sodium or potassium dichromate with sufficient distilled water to make a paste of chromate salt. Add 150ml of concentrated sulphuric acid. Increase the proportions to make larger amounts.

Tulasi *(Ocimum sanctum)* leaf extract preparation:

Fresh leaves of Tulasi *(Ocimum sanctum)* were collected. The collected leaves were thoroughly washed several times using deionized distilled water, air-dried and chopped finely into small pieces. Twenty grams of chopped leaves were taken in pestle and mortar. Leaf extract was prepared by weighing 20g of fine powder with 200 ml of double distilled water boiled at 60°C in Erlenmeyer flask for 20 min. The Tulasi *(Ocimum sanctum)* leaf extract was then filtered through Whatman No.1 filter paper. The filtered was used for the synthesis of nanoparticles in room temperature.

Preparation of 100 ml aqueous $CuCH_3COO_2$ (0.1M) solution

Copper Acetate $CuCH_3COO_2$ procured from the firm Molychem was used as a precursor for the synthesis of Copper nanoparticles. 1.81 gms of $CuCH_3COO_2$ was dissolved in 100 ml of deionized water for use in further experiments.

Green Synthesis of copper nanoparticles:

Plants consists of large number of biologically active compounds and hence, most of the plants have proven record for their anthelmintic, antitumor, antimutagenic, antibacterial and fungicidal properties. The synthesis of metallic NPs involves simple mixing of metal solution with extract of plant. Nanoparticles are produced in the medium due to reduction of metal ions. The reaction to give metallic NPs is as shown in Figure.

Many earlier investigations revealed that Cu NPs can be synthesised by the application of most common precursor copper salts namely, cupric acetate (monohydrate) ($(CH_3COO)_2Cu \cdot H_2O$) (Copper chloride di-hydrate ($CuCl_2 . 2H_2O$) and Copper sulfate pentahydrate ($CuSO_4.5H_2O$) Various factors such as concentration, pH, temperature, influence the nature and properties of synthetic Cu NPs as well as CuO NPs.

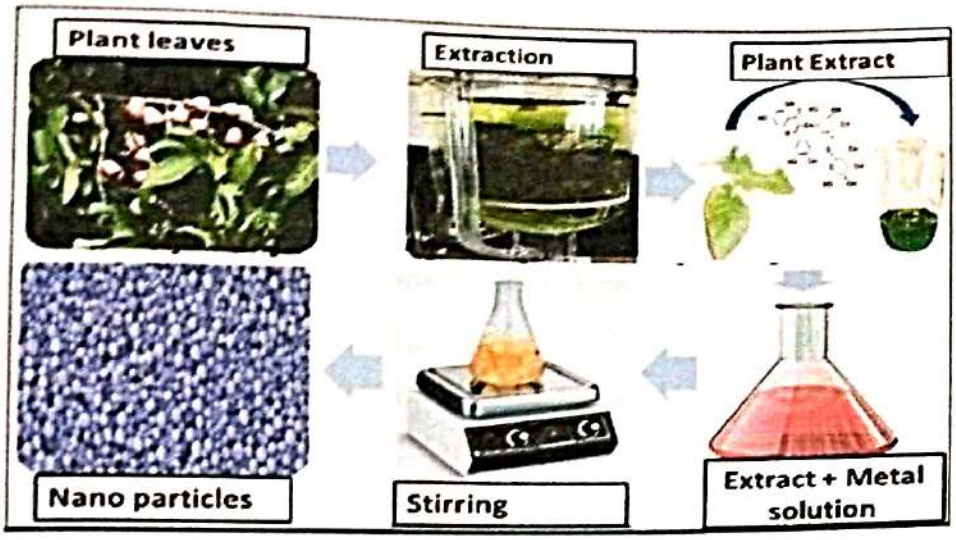


Fig. : Green synthesis of copper nanoparticles.

100 ml of metal solution (stirred for 30mins)

↓

30ml Tulasi *(Ocimum sanctum)* leaf extract added to the metal solution drop wise

↓

Place the beaker on hot plate with continuous stirring

↓

Beaker is covered

↓

Maintaining Temperature at 60°C for 3hrs Continuous Stirring

↓

Brown Colour Precipitate is the formed

Figure : Flow chart for the preparation of CuO Nano Particles

Antimicrobial activity of CuO-NPs

Biogenically synthesized CuO-NPs also have shown antimicrobial activity against wide range of microbes. In this section we have discussed antimicrobial activity of CuO-NPs, Most of the bacteria and pathogenic fungi are harmful for environment, agriculture, and living organisms. The antibacterial character of CuO-NPs against pathogenic fungi and bacteria is due to change in the cell permeability when the plasma membrane of bacterial cell comes in contact with CuO-NPs. This is due to the reason that CuO-NPs move to the cytoplasm and affect the normal functioning of cell resulting in the formation of zone of inhibition against the microbes. Further, CuO-NPs damage the cell membrane which results in the death of bacteria. This can be explained by the mechanism that oxygen species are released on the surface of NPs that react with hydrogen to produce hydrogen peroxide. The generated hydrogen peroxide either stops the growth of bacteria or kills the bacteria.

The bacterial cell membrane disruption takes place by CuO-NPs, due to formation of superoxide and hydroxyl radicals. The zone of inhibition directly proportional to the antibacterial activity of NPs, but inversely proportional to the size of CuO-NPs. Hence, as the size of NPs decreases, higher is the zone of inhibition and greater is the antibacterial action. The formation of hydrogen peroxide is related to the size and surface area of synthesized NPs. Smaller the CuO-NPs and larger the surface zone per unit area, greater is the formation of oxygen species and higher is the formation of hydrogen peroxide. The antibacterial activity has also been found to depend upon the shape of nanoparticles, type of synthesis and concentration of the CuO-NPs

Antifungal activity:

fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release.

Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance.,

Instruments Used:

MAGNETIC STIRRER WITH HOT PLATE:

Magnetic stirrers are widely used in scientific experiments and industrial production. In addition to their excellent stirring performance, they also have the advantage of being easy to use and clean. Stirring is utilized to produce uniform mixes and improve those mixers. A chemical reaction occurs when liquid or liquid-like substances interact with one another. This reaction causes the substances to aggregate. Mixing equipment is used in most vessels that need to be stirred. The way they're designed, as well as the mixing gear, impact how effectively they combine the components. Magnetic stirring is a process you can use to stir liquids in open and closed systems. This process can be performed under pressure or vacuum over a wide temperature range. Additionally, magnetic stirring can be used with any chemical substance.

Uses:

Magnetic stirrers are used to mix fluids rapidly of various viscosities. They're most often seen in laboratories studying biology and chemistry. Magnetic stirrers are utilized in a variety of applications.

Working:

A magnetic stirrer, often known as a Magnetic mixer, is a machine that mixes ingredients by attracting like charges and repulsing dissimilar ones. A magnetic stirrer uses a rotating magnetic field to stir a non-magnetic liquid in a container. The rotating field is created by a magnet mounted on the stirrer underneath the container. As the magnet rotates, it creates a rotating magnetic field that extends into the liquid.

WEIGHING BALANCE:

A weighing balance is a laboratory instrument that is used to measure the mass or weight of an object. They are commonly used in analytical and research laboratories, as well as in the pharmaceutical and chemical industries, where precise measurements are critical. Weighing balances are also used in commercial settings such as in food processing, jewellery making, and shipping.

A typical weighing balance consists of a platform or pan on which the object being measured is placed, and a beam or sensor that detects the weight of the object. The beam or sensor is connected to a display unit that shows the weight in the desired units, such as grams, milligrams, or ounces.

There are three main types of weighing balances:

- Mechanical balances: measure weight using physical components such as levers and counterweights.
- Analytical balances: These are highly accurate and sensitive balances that can measure weight to within a few thousandths of a gram.
- Digital balances: These balances use electronic sensors to measure weight and digitally display results.

Weighing Balance principle: The principle behind weighing balances is based on the concept of balance of weight. This means that the weight of an object is balanced against a known weight, such as a set of calibrated weights until equilibrium is reached. The balance then displays the weight of the object being measured. In conclusion, weighing balances are essential tools in laboratory and industrial settings where accurate and precise measurements are critical. They come in different types and models, each with its own unique features and capabilities

HOT AIR OVEN:

A hot air oven is a type of dry heat sterilization. Dry heat sterilization is used on equipment that cannot be wet and on material that will not melt, catch fire, or change form when exposed to high temperatures. Moist heat sterilization uses water to boil items or steam them to sterilize and doesn't take as long as dry heat sterilization. Examples of items that aren't sterilized in a hot air oven are surgical dressings, rubber items, or plastic material.

Items that are sterilized in a hot air oven include:

- Glassware (like petri dishes, flasks, pipettes, and test tubes)
- Powders (like starch, zinc oxide, and sulfadiazine)
- Materials that contain oils
- Metal equipment (like scalpels, scissors, and blades)

Principle: Hot air ovens use extremely high temperatures over several hours to destroy microorganisms and bacterial spores. The ovens use conduction to sterilize items by heating the outside surfaces of the item, which then absorbs the heat and moves it towards the centre of the item.

The commonly-used temperatures and time that hot air ovens need to sterilize materials is 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.

AUTOCLAVE:

An autoclave is a moist heat sterilizer as the Moist heat sterilization uses water to boil items or steam them to sterilize with specified pressure. Most of the growth mediums and pipette tips and other biological medias are generally preferred for moist heat sterilization.

Principle: Autoclave works under the principle of Moist Heat Sterilization as it uses high pressure and high temperature for longer periods to sterilize the biological medias and other compounds inorder to kill the bacteria and other microorganisms. Generally the autoclave is maintained at 121°C at 15lbs pressure for 1 Hour

Incubator:

Principle: It depends on the principle of thermoelectricity. The incubator has a thermostat which maintains a constant temperature by creating a thermal gradient. For most the organisms 37°C is the favourable temperature while yeast organisms require 30°C.

LAMINAR AIR FLOW CHAMBER:

Principle: It is an enclosed workstation that is used to create a contamination free work environment through filters to capture all the particles entering the cabinet. These are the most useful for the aseptic cabinets the effluent air is drawn into the face of the user.

In a biosafety cabinet, both the sample and user are protected while in the laminar flow cabinet, only the sample is protected and not the user. Laminar flow cabinets are similar to bio safety cabinets with the only difference being that in laminar flow cabinets the effluent air is drawn into the face of the user.

Micropipette:

A micropipette is acommonyetan essential laboratory instrument used to accurately and precisely transfer volumes of liquid in the microliter range. Micropipettes are available in single channel and multi-channel variants.

- All the other chemicals are procured from Qualizens limited.
- For all the assays the Millipore degraded distilled water has been used.

Characterization of CuO nanoparticles:

FTIR analysis

The chemical composition of the synthesized magnesium nanoparticles was studied by using FTIR spectrometer (Perkin-Elmer LS-55- Luminescence spectrometer). The solutions were dried at 750°C and the dried powders were characterized in the range 4000–400 cm -1 using KBr pellet method

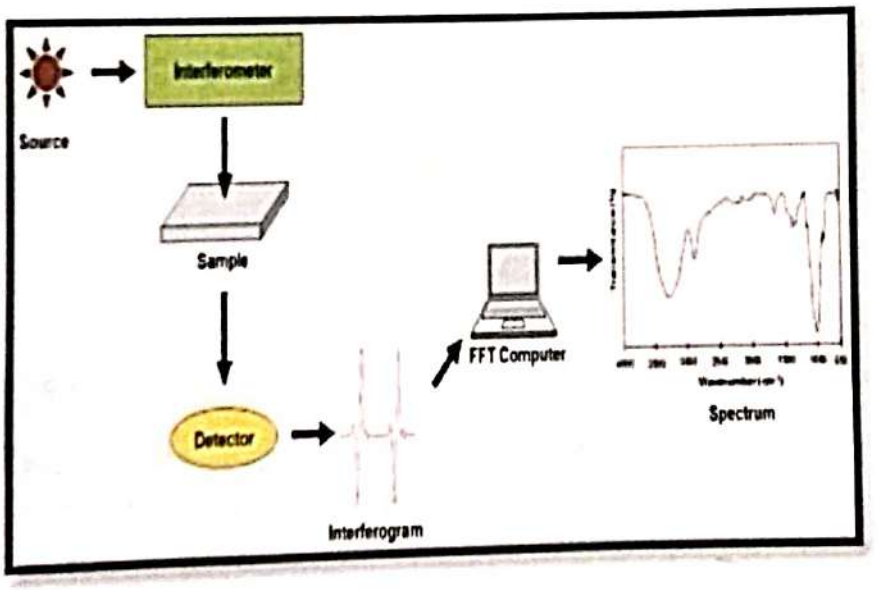


Fig. : FTIR Instrumentation analysis

XRD Analysis

The phase variety and grain size of synthesized silver nanoparticles was determined by X-ray diffraction spectroscopy (Philips PAN analytical). The synthesized silver nanoparticles were studies with CUKα radiation at voltage of 30 kV and current of 20 MA with scan rate of 0.030 /s. Different phases present in the synthesized samples were determined by X' pert high score software with search and match facility. The particle size of the prepared samples was determined by using Scherrer's equation as follows

$$D \approx 0.9\lambda / \beta \cos\theta$$

Where D is the crystal size, λ is the wavelength of X-ray, Θ is the Braggs angle in radians and B is the full width at half maximum of the peak in radians

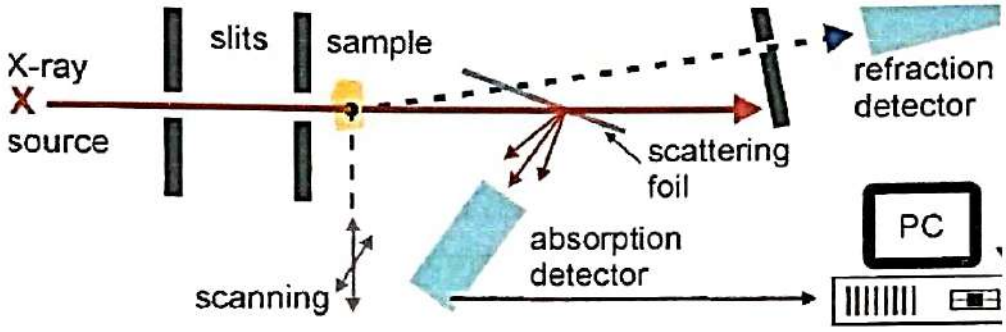


Fig. 6: XRD Instrumentation analysis

SEM (Scanning Electron Microscope)

Scanning electron microscopy (SEM) analysis was carried out using Carl Zeiss Japan, Inodel machine. Thin film of nanoparticle powder sample was prepared on carbon coated tape by adhering small amount of dried fine powder of sample on the grid, excess sample was removed with the help of blotting paper. The film on the SEM grid was allowed to dry by putting it under a mercury lamp for 5 min. The SEM analysis was used to determine the surface structure of biologically synthesized CuO Nanoparticles.

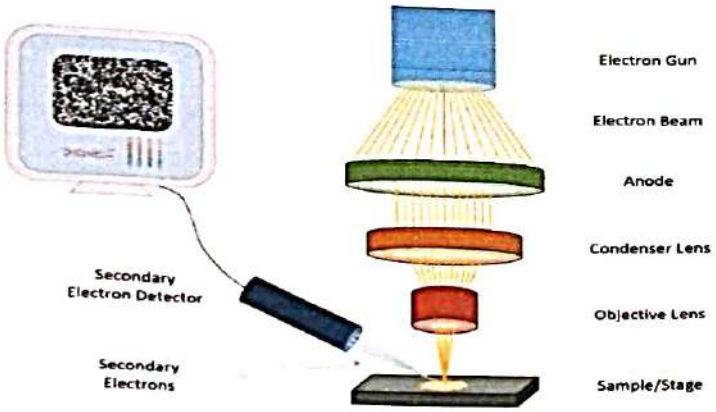


Fig.4: SEM Analysis depict

4. RESULTS AND DISCUSSION

Green Synthesis of Copper Oxide Nanoparticles using Tulasi *(Ocimum sanctum):*

Copper Oxide nanoparticles were synthesized successfully by the green synthesis method using Tulasi *(Ocimum sanctum)* leaf extracts. During exposure to leaf extracts, reduction of copper ions into copper nanoparticles was observed as a result of the colour change from pale Brown colour to biscuit colour. In this method the aqueous leaf extract acts as a solvent with manifold roles as promoter, stabilizer and template for the synthesis of nanoparticles.

Characterization of CuO nanoparticles: Copper oxide nanoparticles obtained were preserved in plastic vials for further characterization. Characterization studies needed to study the exact size, shape and other properties of CuO nanoparticles. In this work I have used XRD and FTIR and SEM analysis to study the CuO nanoparticles.

FT-IR analysis:

To identify the key factors for the copper ion (Cu+) reduction into copper nanoparticles (Cu-NPs), FTIR spectroscopy analyses were carried out. FT-IR analyses show the shifts in the absorbance peak of copper nanoparticles with different points ranging from 561 to 3390cm^{-1} as shown in (Fig. 7). It is evident that there is presence of functional groups such as alkaloids, phenols, halo compounds, and primary and secondary amines in the extract. The IR spectrum of the biosynthesized Cu-NPs showed the peak value at 561,600,679, 1360, 1644, and 3390cm^{-1}. The peak value 561 cm^{-1} relates to the Cu-O bond in the CuO nanostructure group. A peak at 600cm^{-1} and 679cm^{-1} relates to the C-I stretch and C-Cl bond in halo compound group. The peak at 1350cm^{-1} was assigned to be C-H bend in the methane group, 1644cm^{-1} relates to the C-C stretch in the aromatic group and peak at 3390cm^{-1} O-H stretch in the primary and secondary amide group. The peaks corresponding to O–H, C=O, C–N, C–H, C=C are the prominent peaks associated with CuO- NPs. Several scientific findings had ascribed the absorption at 3000–3350 cm^{-1} to N–H of amine or O–H of alcohol/phenol. Absorption peaks in the range of 820–880 cm^{-1} have been attributed to aromatic C–H

bending. A strong absorption peak at wavelength 2900-3000 cm^{-1} was credited to C–H. The absorption band observed at wavelength 1600–700 is traceable to CuO. The absorption band at 1600–1790 are linked to –C=O of carbonyl.

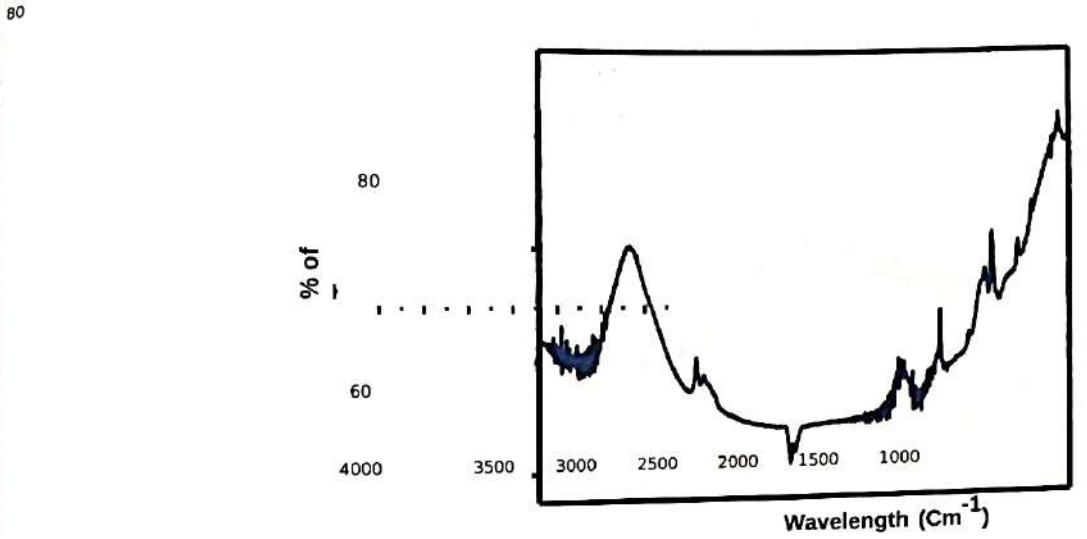


Fig. 7: FTIR analysis of Cu-NPs

XRD Analysis:

XRD technique which is used for the phase determination of crystal structures of the nanoparticles. The XRD analysis of the synthesised particles show characteristic diffraction peaks at 2θ of 32.37, 35.19, 38.49, 48.14, 58.01, 61.31, 66.01, 67.66, 72.37 and 75.19, which were assigned to (110), (11-1), (111), (20-2), (202), (113), (022), (220), (31-2) and (004) planes respectively. From the analysis by XRD, the monoclinic structure of CuO NPs prepared from Azadirachta indica leaf extract was suggested. The monoclinic structure of CuO, so obtained, is then confirmed by comparison with the data provided in MATCH! Software [card no. 96-901-5925] and the cell parameter of the synthesised particle is 4.6832 A°. All the diffraction peaks corresponds to typical monoclinic structure and no other phase was observed.

The average crystallite size of CuO nanoparticles was calculated using the Scherrer formula, D=0.9 $\lambda/\beta \cos\theta$, where λ is the wavelength of X-ray radiation, β is the full width at half maximum (FWHM) of the peaks at the diffracting angle θ. It was found to be 25 nm indicating its crystalline nature.

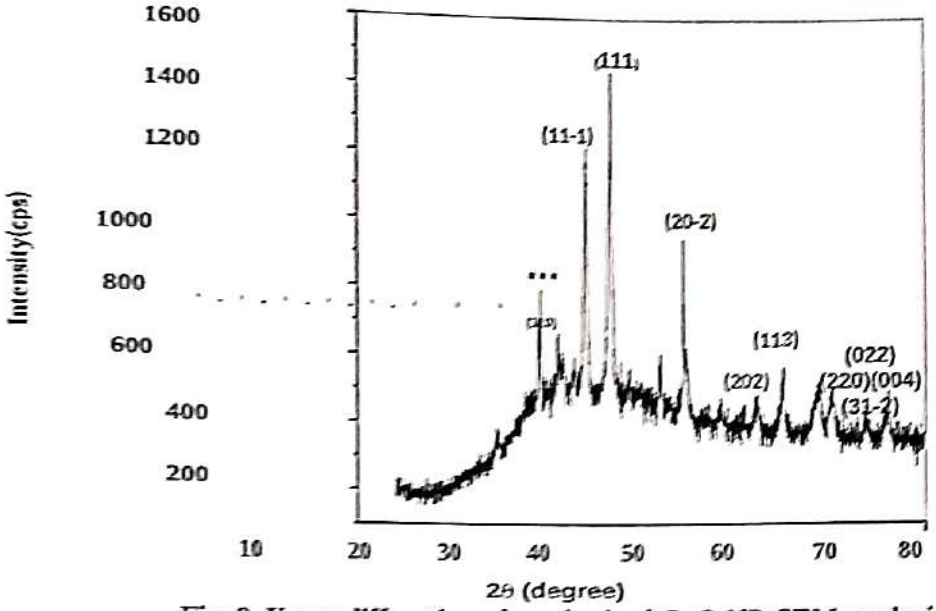


Fig. 8. X-ray diffraction of synthesized CuO NPsSEM analysis:

The technique of scanning electron microscopy is used to visually examine a surface in order to identify contaminants or unidentified particles. For morphological data and particle characterization, SEM analysis is used. The SEM pictures were seen at various magnification settings between 2 nm and 200 nm. The produced nanoparticles were spherical in form and ranged in diameter from 33.6 to 120 nm on average. The biosynthesized CuO NPs produced by Lippia adoensis were reported to have a spherical shape and nanorod shaped structures by (Vinay et al., 2018) using SEM and TEM. According to investigation of P. niruri leaf extract revealed a colour change from pale white to brown and a cylindrical morphology with an average size of 5 nm (Demissie et al., 2020). SEM pictures of produced copper oxide nanoparticles that were aggregated and had particle sizes between 100 and 200 nm (Tahseen Ali Ibrahim et al., 2021).

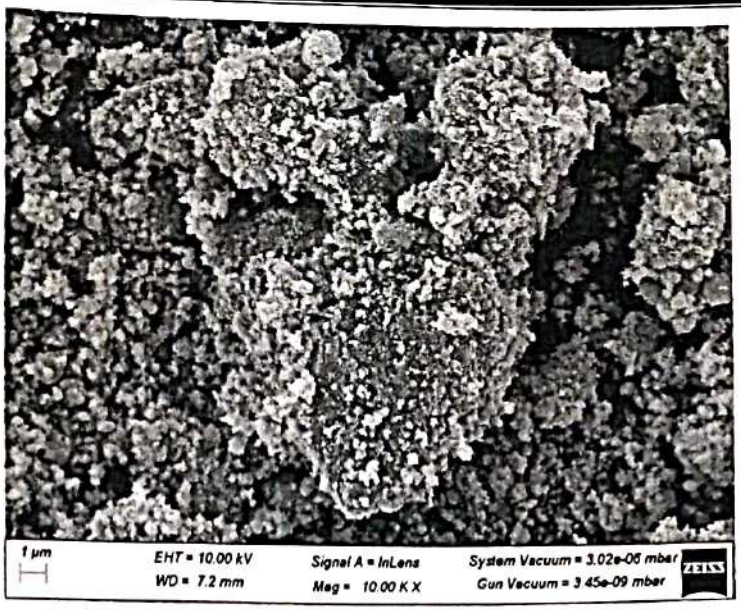


Fig: SEM Image of CuO-NPs

Antimicrobial activity of CuO-NPs:

The antimicrobial property of CuO-NPs towards Gram-positive and Gram-negative bacteria and fungi was tested using the agar well diffusion method. CuO-NPs produced using the green method had strong antibacterial activity against all microbes at concentrations of 800, 500 µg/ml, demonstrating that the dose depends on the mechanism. When the concentration of CuO-NPs against test pathogens increased, so did their antibacterial activity. CuO-NPs had the highest antibacterial activity of 25mm against Escherchia coli at a concentration of 800 µg/mL. It was decided to investigate the antibacterial activity using the well-diffusion method. The strong interaction between silver and the thiol groups found in essential bacterial respiratory enzymes may be the cause of the inhibitory effect of silver compounds. (Dinesh et al., 2022)

S.NO	Test organisms	Zone of inhibition(mm)			
		CuO-NPs (µg/mL)			
		800	600	400	Positive control (Chloramphenicol) 100 µg/mL
1.	*Escherichia coli*	33	28	30	35
2.		30	26	24	27
3.	*Candida*	28	24	30	25

Fig.13: Antibacterial activity of CuO-NPs against *Streptococcus aureus (b) and Escherichia coli(a)*

Fig.14: Antifungal activity of CuO-NPs against Candida

Anti-oxidant activity of CuO-NPs:

Different volumes (2 - 20µl) of CuO-NPs were made up to 40µl with DMSO and 2.96ml DPPH (0.1mM) solution was added. The reaction mixture was incubated in dark condition at room temperature for 20 min. After 20 min, the absorbance of the mixture was read at 517 nm. 3ml of DPPH was taken as control. The % radical scavenging activity of the plant extracts was calculated using the following formula

$$\%RSA = \frac{\text{Abs control} - \text{Abs sample}}{\text{Abs control}} * 100$$

Where, RSA is the Radical Scavenging Activity; Abs control is the absorbance of DPPH radical + ethanol; Abs sample is the absorbance of DPPH radical + CuO NPs.

Result:

S.NO	DPPH	CuO NPs Solution	Incubation time	OD Values (517nm)
CONTROL	3ml	0	30 minutes	0.72
			1 hour	0.72
SAMPLE	2.96ml	0.06ml	30 minutes	0.66
			1 hour	0.55

Incubation in dark place

5. Conclusions and Recommendations:

Nanotechnology finds extensive applications in nanomedicine, an emerging new field. Nanoparticles can be synthesised by chemical and physical methods but these methods are quite expensive and toxic Use of biological organisms, plant extracts could be an alternative method for production of nanoparticles. The present study reports a green, eco-friendly and cost-effective approach for the synthesis of zinc oxide nanoparticles, using the Tulasi (*Ocimum sanctum*) leaf extract, which acts as a reducing and stabilizing agent . We have also studied the characterization of CuO nanoparticles. FTIR results proved that bioactive compounds responsible for copper bio reduction could be proteins and flavonoids presumed to act as reducing and capping agents for the copper nanoparticles preventing the agglomeration of the particles and thereby stabilizing the nanoparticles. The synthesized nanoparticles are then characterized by using (X-ray diffraction) XRD technique and it is found that the size of particles is about 31 nm. Also, the synthesized nanoparticles exhibit crystalline nature. This method offers a biological technique to synthesize CuO nanoparticles in controlled and precise manner with well-defined diverse sizes and shapes. This study also suggests that green synthesized method can be used as an alternative to the existing chemical and physical methods. More research is needed to shed light on deducing additional details and discerning a more accurate interpretation of the results obtained.

In conclusion green synthesis of CuO-NPs is much more safer and environment friendly than physical and chemical methods. CuO-NP's find application as antimicrobial agent and photocatalyst. The plant based CuO-NPs can become a major field of research and can be used extensively in the food, pharmaceuticals and cosmetic industries. The potential applications of CuO-NPs as antimicrobial agent as well as antifungal agent.

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AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life Sciences, following APSCHE,

Submitted by

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III B.Sc.BT.BC.C

Under the supervision of

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Visakhapatnam-530017

Submitted to

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Vishnupur, Bhimavaram.

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This is to certify that this Internship project work entitled "Antimicrobial and Antioxidant activity of NEEM (*Azardichta indica*) based Copper Oxide nanoparticles" is bonafide work done by NUNNA.MANJULA with Reg. Number 213117121279 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

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Date: 27-05-24

Place: Visakhapatnam

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

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DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

Antibacterial and Antifungal activity of Hibiscus (*Hibiscus rosa-sinensis*) Based Manganese Oxide nanoparticles

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE

Submitted by

M SRI LAKSHMI SNEHA

III B.Sc. BT.BC.C

Regd.no 213117121273

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

Bio-Enviro Chemical solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

VISHNU
UNIVERSAL LEARNING

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

BHIMAVARAM-534202

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DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Hibiscus (Hibiscus rosa-sinensis) based Manganese oxide nanoparticles" is a bonafide work done by **M SRI LAKSHMI SNEHA** with Reg. Number 213117121273 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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CERTIFICATE

This is to certify that Ms. MULAGAPATI SRI LAKSHMI SNEHA Regd. No. 213117121273 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF HIBISCUS PLANT BASED MANGANESE NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions BECS Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ocimum sanctum (holy basil) based copper oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

MOHAMMAD UZMA GOUSIA AFFRIN

III B.Sc. BT.BC.C

Regd.no 213117121272

Under the supervision of

Dr. B. Satish Mohan,
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BECS.

At

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Visakhapatnam-530017

Submitted to

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CERTIFICATE

This is to certify that this Internship project work is entitle"Antimicrobial and Antioxidant activity of ocimum sanctum(holy basil) based copper oxide nanoparticles" is a bonafide work done by **MOHAMMAD UZMA GOUSIA AFFRIN** with Reg. Number 213117121272 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. MOHAMMAD UZMA GOUSIA AFFRIN, Regd.No. 213117121272 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF OCIMUM SANCTUM PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

MANGIPUDI VENKATESWARLU

III B.Sc. C.BC.BT

Regd.no 213117121271

Under the supervision of

Dr. B. Satish Mohan,
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At

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Submitted to

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by MANGIPUDI VENKATESWARLU with Reg. Number 213117121271 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Mr. MANGIPUDI VENKATESWARLU, Regd.No. 213117121271 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF ZINGIBER OFFICINALE PLANT BASED SIVER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 22-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

MACHHA ESWAR

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by MACHHA ESWAR with Reg. Number 213117121270 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Mr. MACHHA ESWAR, Regd. No. 213117121270 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF GUAVA PLANT BASED ALUMINIUM NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

DECLARATION

I, MACHHA ESWAR, student of Bachelor Science Program with Reg. No.213117121270 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

M. Eswar

Signature of student

MACHHA ESWAR

AN INTERNSHIP REPORT ON

Antibacterial and Antifungal activity of Hibiscus (*Hibiscus rosa-sinensis*) Based Manganese Oxide nanoparticles

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE

Submitted by

M LAKSHMI PRIYA

III B.Sc. BT.BC.C

Regd.no 213117121269

Under the supervision of

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BECS.

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(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Hibiscus (Hibiscus rosa-sinensis) based Manganese oxide nanoparticles" is a bonafide work done by **M LAKSHMI PRIYA** with Reg. Number 213117121269 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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CERTIFICATE

This is to certify that Ms. LAKSHMI PRIYA MADABHUSHI, Regd. No. 213117121269 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF HIBISCUS PLANT BASED MANGANESE NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Bio Enviro Chemical Solutions BECS Visakhapatnam

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BOYINA TARUN SHEKHAR

III B.Sc. C.BC.BT

Regd.no 213117121251

Under the supervision of

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by **GEDALA KRISHNAMA NAIDU** with Reg. Number 213117121256 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Mr. GEDALA KRISHNAMA NAIDU, Regd. No. 213117121256 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF GUAVA PLANT BASED ALUMINIUM NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

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DECLARATION

I, GEDALA KRISHNAMA NAIDU, student of Bachelor Science Program with Reg. No.213117121256 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

G.K Naidu

Signature of student

GEDALA KRISHNAMA NAIDU

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

GANDABOINA JAHNAVI

Roll No. 213117121255

Group: C.BC.BT LIFE SCIENCES

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UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical Solutions

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This is to certify that Ms. GANDABOINA JAHNAVI, Regd. No. 213117121255 of partment of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-ITRO ANALYSIS OF MANGIFERA INDICA PLANT BASED COPPER NANOPARTICLES .S ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, alkol from 15-02-2024 to 15-05-2024.

he overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

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BIO ENVIRO CHEMICAL SOLUTIONS
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Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

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CERTIFICATE

This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based copper oxide nanoparticles** is a bonafide work done by **G.jahnavi** .with Reg. Number **21311721255** submitted in partial fulfilment of the work for the Degree of Bachelor of Science) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ginger (Zingerber officinale) based Silver oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

DAVALA RENUKA

III B.Sc.BC.BT.C

Regd.no 213117121254

Under the supervision of

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At

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Ginger(Zingerber officinale) based Silver oxide nanoparticles" is a bonafide work done by DAVALA RENUKA, with Reg. Number 213117121254 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BC.BT.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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CERTIFICATE

This is to certify that Ms. DAVALA RENUKA, Regd.No. 213117121254 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF ZINGIBER OFFICINALE PLANT BASED SIVER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ginger (Zingerber officinale)based silver oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Ginger (Zingerber officinale)based Silver oxide nanoparticles" is a bonafide work done by **DASARI NAGA AMBIKA,**with Reg. Number 213117121253 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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CERTIFICATE

This is to certify that Ms. DASARI NAGAAMBIKA, Regd.No. 213117121253 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF ZINGIBER OFFICINALE PLANT BASED SIVER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

" Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles "

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BAISETTI SAI MANIKANTA

III B.Sc. C.BC.BT

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Under the supervision of

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BHIMAVARAM-534202

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by **BAISETTI SAI MANIKANTA** with Reg. Number 213117121249 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Mr. BAISETTI SAI MANIKANTA, Regd. No. 213117121249 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF GUAVA PLANT BASED ALUMINIUM NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

" Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles "

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BAISETTI SAI MANIKANTA

III B.Sc. C.BC.BT

Regd.no 213117121249

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.
At

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Submitted to

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life sciences, following APSCHE,

Submitted by

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CERTIFICATE

This is to certify that this Internship project work entitled "Antimicrobial and Antioxidant Activity of Azadirchta incida (neem) based copper oxide nanoparticles" is bonafide work done by B.NAGA JAYA SAI SREE with Reg. Number 213117121248 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP REPORT ON

Antibacterial and Antifungal activity of Hibiscus (*Hibiscus rosa-sinensis*) Based Manganese Oxide nanoparticles

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE

Submitted by

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Hibiscus (Hibiscus rosa-sinensis) based Manganese oxide nanoparticles" is a bonafide work done by **A VENKATA SRI KOUSHITHA** with Reg. Number 213117121247 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

DIRECTOR
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Visakhapatnam-530017, India

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP REPORT ON

Antibacterial and Antifungal activity of Hibiscus (*Hibiscus rosa-sinensis*) Based Manganese Oxide nanoparticles

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE

Submitted by

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Hibiscus (Hibiscus rosa-sinensis) based Manganese oxide nanoparticles" is a bonafide work done by **A VENKATA SRI KOUSHITHA** with Reg. Number 213117121247 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

YARAKARAJU HIMAJA

III B.Sc. MB.BC.BT

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Under the supervision of

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles" is a bonafide work done by **YARAKARAJU HIMAJA** with Reg. Number 213117141457 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life sciences, following APSCHE,

Submitted by
THOTA.AKSHARA

Reg.no: 213117141453

III B.Sc.MB.BT.BC

Under the supervision of

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Submitted to

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director
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Visakhapatnam-530017, India

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Date: 27-05-24
Place: Visakhapatnam

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DEPARTMENT OF LIFE-SCIENCE

CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of NEEM (*Azadirachta indica*) based Copper Oxide nanoparticles" is bonafide work done by THOTA.AKSHARA with Reg. Number 213117141453 submitted in partial fulfilment of the work for the Degree of Bachelor Science MB.BT.BC in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

THAMMIREDDY VASAVI PRIYA

III B.Sc. MB.BC.BT

Regd.no 213117141452

Under the supervision of

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At

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Visakhapatnam-530017

Submitted to

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This is to certify that Ms. TAMMI REDDY VASAVI PRIYA, Regd. No. 213117141452 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF *Costus igneus* PLANT BASED FERRIC NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 22-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Hibiscus roseus Thore based on managanese monoxide"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

SANKU SYAMALA SAI PRASANNA

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This is to certify that this Internship project work is entitled "Antimicribial and Antioxidant activity of Hibiscus roseus Thore based on manganese monoxide" is a bonafide work done by **SANKU SYAMALA SAI PRASANNA** with Reg. Number 213117141451 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. SANKU SYAMALA SAI PRASANNA, Regd. No. 213117141451 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF HIBISCUS PLANT BASED MANGANESE NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director
DIRECTOR
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Visakhapatnam-530017, India

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Date: 27-05-24
Place: Visakhapatnam

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N·S·D·C National Skill Development Corporation Transforming the skill landscape
Skill India कौशल भारत-कुशल भारत

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ginger(ZINGIBER OFFICINALE) based silver nitrate nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

PENMETSA MOUNIKA DEVI

III B.Sc. MB.BC.BT

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Ginger (ZINGIBER OFFICINALE) based silver nitrate nanoparticles" is a bonafide work done by **PENMETSA MOUNIKA DEV I** with Reg. Number 213117141445 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

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DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life sciences, following APSCHE,

Submitted by

Ogireddy.Deepika

Reg.no: 213117141443

III B.Sc.MB.BT.BC

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS. AT

Submitted to

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This is to certify that Ms. OGIREDDY DEEPIKA, Regd.No. 213117141443 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF AZADIRACHTA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

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DIRECTOR
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Date: 22-05-24
Place: Visakhapatnam

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of NEEM(*Azadirachta indica*) based copper oxide nanoparticles" is a bonafide work done by OGIREDDY.DEEPIKA with Reg. Number 213117141443 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

NAGARAJU LIKHITHA

III B.Sc. MB.BC.BT

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Under the supervision of

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

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Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Hibiscus roseus Thore based on managanese monoxide"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

MUDDALA YASHODHARANI

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This is to certify that this Internship project work is entitled "Antimicribial and Antioxidant activity of Hibiscus roseus Thore based on manganese monoxide" is a bonafide work done by **MUDDALA YASHODHARANI** with Reg. Number 213117141438 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

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erall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles" is a bonafide work done by **KADIYAM VEERA VENKATA MANIDEEP** with Reg. Number 213117141427 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

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Visakhapatnam-530017, India

Date: 27 - 05 - 24
Place: Visakhapatnam

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

JAVVADI ANITHA DEVI

Roll No. 213117141426

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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Date: 27-05-24
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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BAVYA SRI SATYA ILLA

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Costus Igneus (Chamaecostus cuspidatus) based Ferric oxide nanoparticles" is a bonafide work done by **BAVYA SRI SATYA ILLA** with Reg. Number 213117141424 submitted in partial fulfilment of the work for the Degree of Bachelor Science (MB.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ginger(ZINGIBER OFFICINALE) based silver nitrate nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

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Date: 27-05-24

Place: Visakhapatnam

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

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AN INTERNSHIP REPORT ON

" Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles "

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BONAM CHARAN SAI DATTA

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Submitted to

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AN INTERNSHIP REPORT ON

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An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

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Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

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AN INTERNSHIP REPORT ON

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An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

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DECLARATION

I, VASA GOPIKA, student of Bachelor Science Program with Reg. No.213117121297 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

Signature of student

VASA GOPIKA

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I would like to express my sincere gratitude to **Dr. I. R. Krishnam Raju, Principal**, B. V. Raju college, Bhimavaram for giving the opportunity to complete my community service project.

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I am highly indebted to **Dr. P. Seetharam sir, Department of Chemistry** for his guidance and constant supervision as well as for providing necessary information regarding the project and for their support in completing the project. His constant guidance and willingness to share his vast knowledge made us understand this project and its manifestations in great depths and helped us to complete the assigned tasks on time.

I am also very grateful to the **M. Vamsi Krishna sir, Department of Biotechnology** for sharing his knowledge and experience with us in this internship as it would be impossible for us to fulfil the project without his support and encouragement.

I would like to extend my sincere thanks to all my faculty advisors andespecially my mentor, **E. A. V. V. Rambabu. M sir, Head of the Department of Life sciences, B V Raju college** for his timely guidance and constant supervision.

It has been great honour and privilege to undergo training at Bio Enviro Chemical Solutions

I would like to express my gratitude towards my parents for their kindcooperation and encouragement which help me in completion of this project.

Signature of student

VASA GOPIKA

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1. INTRODUCTION

Nanomaterials are the basis of nanoscience and nanotechnology. Over the past few years, the interdisciplinary study and development sector known as nanostructure science and technology has expanded dramatically. Nanomaterials are typically defined as substances that are smaller than 100 nm in at least one dimension. A nanometer is one millionth of a millimetre in size and has a diameter 100,000 times smaller than a human hair. Because of the unique optical, magnetic, electrical, and other properties that arise at this scale, nanomaterials are of significant interest. These newly discovered qualities have the potential to have significant effects on electronics, medicine, the environment, and sanitation as well as on how effectively water is treated. These particles, which display highly controlled physical, chemical, and biological properties at the atomic and subatomic levels, are generally referred to as nanoparticles (NPs). Yet, due to their distinctive properties, they can be used in a variety of fields, including biology, communications, agriculture, electronics, and optoelectronics. (Eatemadi A, 2014)

Classification of nanomaterials

Nanomaterials can be categorised as zero-dimensional (quantum dots), one-dimensional (quantum wires), two-dimensional (thin films), or three-dimensional (nanostructured mater) depending on the dimension in which the size effect on the resultant property becomes apparent (Table 1).

Table 1: Classification of Nanomaterials

S.No.	Dimensions	Size	Examples
1	3-dimensions	< 100 nm	Nanoparticles, quantum dots
2	2-dimensions	< 100 nm	Nanotubes, nanowires, nanofibers
3	1-dimension	< 100 nm	Thin films, coatings
4	0-dimension	< 100 nm	Semiconductor quantum dots (QDs), nanoparticles and colloidal particles

Due to broad and intense agricultural practises, there has been a noticeable rise in the environmental discharge of some dangerous acute natural pollutants in recent years. The chemical equilibrium of organ phosphorus compounds enables them to penetrate deeper into the soil and reach groundwater. (Azizi S. Mohamad R, 2017)

Moreover, they are sufficiently water soluble and biodegradation-resistant. Considering how long they remain in the environment, many pesticides have high levels of toxicity. Thus, it is crucial to remove these chemically persistent, non-biodegradable pesticide pollutants from contaminated water. Due to its potential to address environmental challenges, broadband semiconducting photocatalysis has attracted the interest of many professionals in recent years. Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties(Eatemadi A, 2014) (Pês BS, 2014).

Applications of copper nanoparticles

Cu-NPs have diverse scientific applications. They are very effective against different pathogenic microbes. A high concentration of Cu-NPs generates reactive oxygen species in bacterial cells which eventually cause cell lysis. Moreover, Cu-NPs have exhibited anticancer and antifungal activities. Due to their antimicrobial activity, it is also used for food preservation and agricultural field to draw protection against different pathogenic fungi and bacteria. Copper-based nano fertilizer and nano- insecticides promote growth and nutrients in crop plants. Copper-based bioremediation plays a pivotal role in waste-water treatment and removal of heavy metals from soil. Copper is a good conductor of electricity hence it is used as a super-conductor and has a significant contribution to the modern electronic field. In the following figure, we have summarized the different applications of Cu-NPs and also elaborate its major application in the following context.

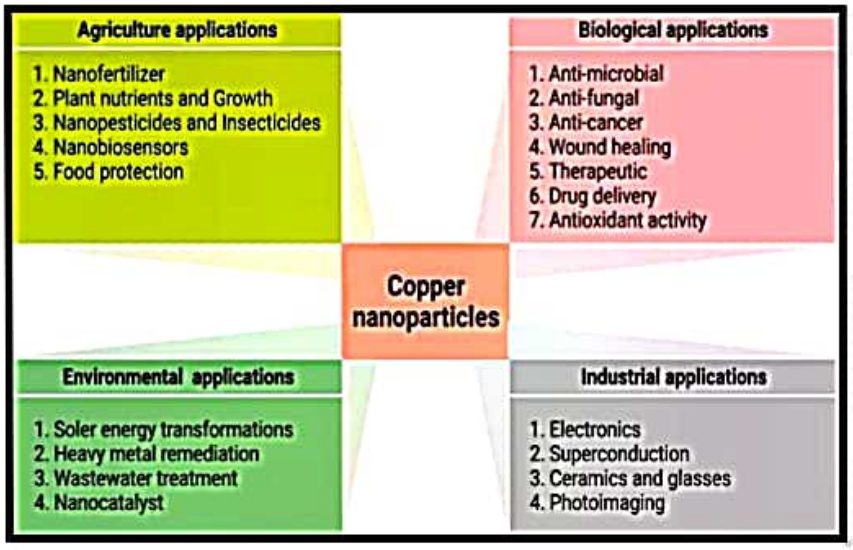


Fig. 2: Applications of copper nanoparticles

2. REVIEW OF LITERATURE

Synthesis of nanoparticles involves a multidisciplinary technology with different fields of science (biology, chemistry and physics) and engineering research. Different methods have different routes for the synthesis of nanoparticles. Number of physical methods has been reported for the synthesis of nanoparticles but each method has some limitations in which primarily the cost of the instrument is a common hurdle. Secondly, larger space and high energy requirement for set-up of all the experimental conditions are a stumbling block.

Chemicals can be used for the effective generation of nanomaterials that are stable in nature. With the development of new chemical methods, the concern for environmental contaminations is also heightened as the chemical procedures involves use of toxic solvents, high energy consumption and large amounts of hazardous byproducts that may create a high risk to the environment and human health. These methods also require capping agents for stabilization of the nanoparticles. Furthermore, the production cost is high and it generates limited shapes of nanoparticles which greatly diminishing their potential properties and applications.

Methods for synthesis:

The top-down approach uses initial macroscopic structures. The methods begin with larger particles which are reduced to nanoparticles after a sequence of operations performed over them. Main shortcomings of these methods are that they involve large installations and hug capital is required for set up. The methods are quite expensive and not suitable for large-scale production. The method is suitable for laboratory experimentation. The approach is based upon the grinding of materials. These methods are not suitable for soft sample. (Pês BS, 2014)

Methods in top-down approach:

1. Physical vapour deposition.
2. Chemical vapour deposition.
3. Ion implantation.
4. Electron beam lithography.
5. X-ray lithography.

Bottom-up approaches of production of nanomaterials comprise the miniaturization of materials constituents to the atomic level with the additional procedure leading to the development of nanostructures. Throughout the further progression, the physical forces working at nanoscale combined simple units into larger stable structures. The methodology is principally based on the principle of molecular recognition (self-assembly). Self-assembly means growing more and more things about one's kind from themselves. Many of these techniques are still under development or are just beginning to be used for the commercial production of nanoparticles

Methods in a bottom-up approach:

1. Sol-gel synthesis
2. Colloidal precipitation
3. Hydrothermal synthesis
4. Organometallic chemical route
5. Electro deposition.

INTRODUCTION TO TULASI

In ethno- botanical literature of India, several hundreds of plants are known to have the potential to treat many diseases. Among them the most popular ones is Tulasi traditionally used for the treatment of diseases. The Tulsi plant is known as "The mother medicine of Nature " and "The Queen of Herbs". For the docking studies, the chosen plant species is Ocimum tenuiflorum, which is also known as Ocimum sanctum. The common name of Ocimum tenuiflorum is "Krishna tulsi"

DISTRIBUTION:

Ocimum tenuiflorum is native to India, Iran and now cultivated in Egypt, France, Hungary, Italy, Morocco, USA. Basil is naturally found wild in the tropical and subtropical regions of the world. Basil thrives in warm and temperate climates. Basil is an aromatic, low growing herb the leaves of which have a bright green to purple ovate colour, and is grown in warm, tropical climate. Basils are native to tropical Asia and are likely to have originated in India. It is an annual plant, usually propagated through seeds. It is widely distributed in tropical areas and can be easily found at an altitude of 1800 meters in Himalayan region (shinde, 2014)

TAXONOMIC STUDY

It is a much-branched small herb and 30 to 75 cm in height. All parts of Tulasi are used in medicine, especially fresh and dried leaves. Leaves are oblong, acute with entire or serrate margin, pubescent on both sides and minutely gland dotted. The leaves are green in color with aromatic flavor and slightly pungent taste. Flowers are purplish in color in the form of racemes. Nutlets are subglobose, slightly compressed, pale brown or red in color. Seeds are reddish black and subglobose. Leaves have petioles and are ovate, up to 5 cm long, usually slightly toothed. The flowers are purplish in elongate racemes in close whorls. The two main morphotypes cultivated in India and Nepal are green-leaved (Sri or Lakshmi tulasi) and purple-leaved (Krishna tulasi) (Kumar, 2018)

BOTANICAL CLASSIFICATION:

Domain: Eukaryota
Kingdom: Plantae
Phylum: Spermatophyta
Sub-phylum: Angiospermae
Class: Dicotyledonae
Order: Lamiales
Family: Lamiaceae
Genus: Ocimum
Species: tenuiflorum

THERAPEUTIC USES:

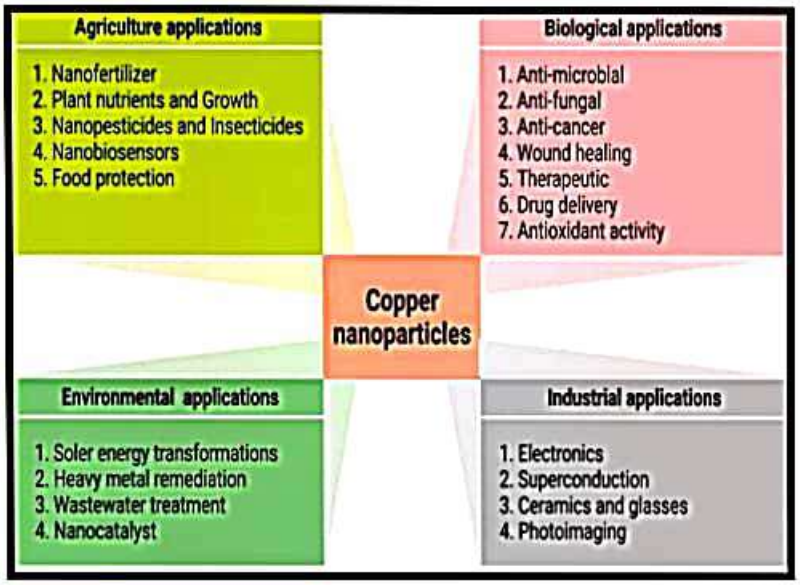
The Holi basil is the most sacred plant and it is mentioned in Charaka Samhita and Susruta Samhita, as every part of plant has its own medicinal properties. This immortal plant is the most sacred plant in Hindu religion, which contains in itself every perfection, cures every ill, and purifies and guides to the heavenly paradise those who worship it. These studies reveal that tulasi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti- oxidant, anti-cataract, anti-inflammatory, chemopreventive, radio protective, hepato protective, neuro-protective, cardio-protective, anti-diabetic, anti- hypercholesterolemia, anti-hypertensive, anti-carcinogenic, analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant, memory enhancement, anti- asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritic, adaptogenic, anti-stress, anti- cataract, anti-leukodermal and anti-coagulant activities (MM, 2014) (Chanthaboury M, 2022)

Green synthesis of CuO NPs using plant extract

Copper Oxide Nanoparticles:

Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties.

Therefore, the development of green synthesis of CuO-NPs is advancing as a key branch of nanotechnology where the use of biological entities like plant extract or plant biomass, microorganisms for the generation of NPs could be an alternative to chemical and physical methods in an eco-friendly way. Hence, this project describes the green-inspired synthesis of CuO-NPs hat can provide advantage over the physical and chemical methods. Novel heterogeneous metal oxide semiconductor materials have recently been developed as a promising alternative to conventional wastewater treatment. These materials have drawn significant attention due to their photocatalytic ability in the degradation of various environmental pollutants such as detergents, pesticides, dyes, and volatile organic compounds under UV light irradiation. In contrast to conventional wastewater treatment, these photocatalysts have the ability to transform contaminants into safe compounds while they are still in the wastewater. With CuO being well-known as a non-toxic UV and photoactive material, the use of photocatalysts in the treatment of water pollution has gained increasing attention. CuO nanoparticle-based composite materials have been thoroughly investigated for their potential to increase CuO efficiency in photocatalysis by metal ion loading, coupling with other metal oxides, and combining with carbonaceous materials. The goal of the current effort is to create zinc oxide nanoparticles utilising a green synthesis method. (Prasad). (Bordbar M) (Bhuyan T. Mishra K. Khanuja M, 2015)



Pharmacological Activities

Antibacterial activity:

The science dealing with the study of the inhibition and treatment of diseases caused by microorganisms is known as medical microbiology. Its sub-disciplines are virology (study of viruses), bacteriology (study of bacteria), mycology (study of fungi), phycology (study of algae) and protozoology (study of protozoa). For the treatment of diseases inhibitory chemicals used to kill bacteria's or inhibit their growth, are called antibacterial agents. The ability of substances to limits or prevent the growth of bacteria's is called antibacterial activity of the material. (Bhuyan T. Mishra K. Khanuja M, 2015)

Antifungal activity:

It is defined as the ability of a substance to limits or inhibits the growth of yeasts and other fungal organisms. Antifungal agents are used to kill or inhibit the further growth of fungi. In medicine, they are employed as a treatment for infections such as athlete's foot, ringworm and thrush and work by exploiting differences between mammalian and fungal cells. They kill off the fungal organism without side effects on the host.

Unlike bacteria, both fungi and humans are eukaryotes. Thus, fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance. Therefore, a greater attention has been paid to antimicrobial activity screening and valuating methods. The antimicrobial activities of nanoparticles have been evaluated using disc diffusion, flow cyto-fluorometric and bioluminescent methods

3. MATERIALS AND METHODS

Materials and Methods

Chemicals

Copper acetate procured from the firm Molychem was used as a precursor for the synthesis of copper nanoparticles and Nutrient Agar Media for the Antibacterial and Antifungal activity.

Glassware and general apparatus

Conical flasks and Beakers, Volumetric flasks, measuring cylinders, Test tubes, Centrifuge tubes, Hot air Oven, Watch Glass and Hotplate.

Chromic acid wash

Follow all normal safety precautions when using concentrated acids and acid solutions. Acids can severely burn the skin. Dispose of all acids properly. A chromic acid wash has hydrolyticand oxidative capabilities for the chemical decomposition of biological molecules. The acid may also dissolve mineral deposits.

To prepare a chromic acid wash, mix 2 g of sodium or potassium dichromate with sufficient distilled water to make a paste of chromate salt. Add 150ml of concentrated sulphuric acid. Increase the proportions to make larger amounts.

Tulasi *(Ocimum sanctum)* leaf extract preparation:

Fresh leaves of Tulasi *(Ocimum sanctum)* were collected. The collected leaves were thoroughly washed several times using deionized distilled water, air-dried and chopped finely into small pieces. Twenty grams of chopped leaves were taken in pestle and mortar. Leaf extract was prepared by weighing 20g of fine powder with 200 ml of double distilled water boiled at 60°C in Erlenmeyer flask for 20 min. The Tulasi *(Ocimum sanctum)* leaf extract was then filtered through Whatman No.1 filter paper. The filtered was used for the synthesis of nanoparticles in room temperature.

Preparation of 100 ml aqueous $CuCH_3COO_2$ (0.1M) solution

Copper Acetate $CuCH_3COO_2$ procured from the firm Molychem was used as a precursor for the synthesis of Copper nanoparticles. 1.81 gms of $CuCH_3COO_2$ was dissolved in 100 ml of deionized water for use in further experiments.

Green Synthesis of copper nanoparticles:

Plants consists of large number of biologically active compounds and hence, most of the plants have proven record for their anthelmintic, antitumor, antimutagenic, antibacterial and fungicidal properties. The synthesis of metallic NPs involves simple mixing of metal solution with extract of plant. Nanoparticles are produced in the medium due to reduction of metal ions. The reaction to give metallic NPs is as shown in Figure.

Many earlier investigations revealed that Cu NPs can be synthesised by the application of most common precursor copper salts namely, cupric acetate (monohydrate) ($(CH_3COO)_2Cu{\cdot}H_2O$) (Copper chloride di-hydrate ($CuCl_2.\ 2H_2O$) and Copper sulfate pentahydrate ($CuSO_4.5H_2O$) Various factors such as concentration, pH, temperature, influence the nature and properties of synthetic Cu NPs as well as CuO NPs.

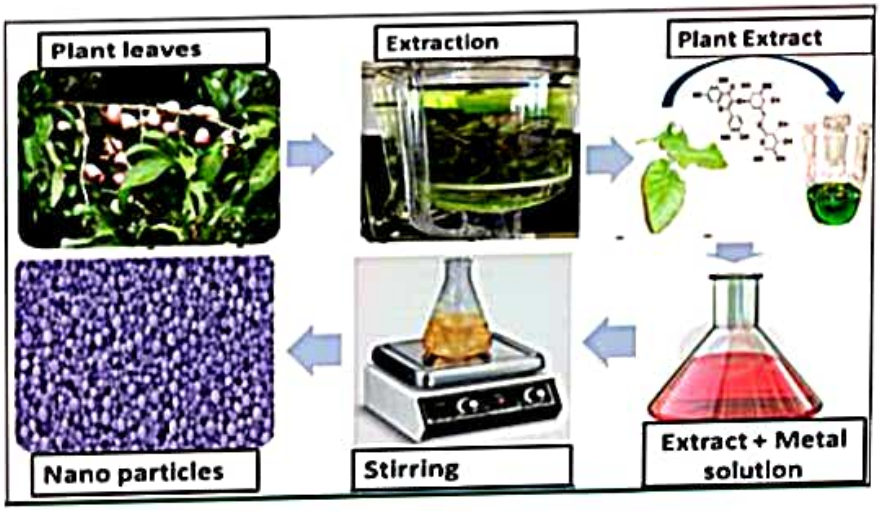


Fig. : Green synthesis of copper nanoparticles.

100 ml of metal solution (stirred for 30mins)

30ml Tulasi *(Ocimum sanctum)* leaf extract added to the metal solution drop wise

Place the beaker on hot plate with continuous stirring

Beaker is covered

Maintaining Temperature at 60°C for 3hrs Continuous Stirring

Brown Colour Precipitate is the formed

Figure : Flow chart for the preparation of CuO Nano Particles

Antimicrobial activity of CuO-NPs

Biogenically synthesized CuO-NPs also have shown antimicrobial activity against wide range of microbes. In this section we have discussed antimicrobial activity of CuO-NPs, Most of the bacteria and pathogenic fungi are harmful for environment, agriculture, and living organisms. The antibacterial character of CuO-NPs against pathogenic fungi and bacteria is due to change in the cell permeability when the plasma membrane of bacterial cell comes in contact with CuO-NPs. This is due to the reason that CuO-NPs move to the cytoplasm and affect the normal functioning of cell resulting in the formation of zone of inhibition against the microbes. Further, CuO-NPs damage the cell membrane which results in the death of bacteria. This can be explained by the mechanism that oxygen species are released on the surface of NPs that react with hydrogen to produce hydrogen peroxide. The generated hydrogen peroxide either stops the growth of bacteria or kills the bacteria.

The bacterial cell membrane disruption takes place by CuO-NPs, due to formation of superoxide and hydroxyl radicals. The zone of inhibition directly proportional to the antibacterial activity of NPs, but inversely proportional to the size of CuO-NPs. Hence, as the size of NPs decreases, higher is the zone of inhibition and greater is the antibacterial action. The formation of hydrogen peroxide is related to the size and surface area of synthesized NPs. Smaller the CuO-NPs and larger the surface zone per unit area, greater is the formation of oxygen species and higher is the formation of hydrogen peroxide. The antibacterial activity has also been found to depend upon the shape of nanoparticles, type of synthesis and concentration of the CuO-NPs

Antifungal activity:

fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release.

Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance.,

Instruments Used:

MAGNETIC STIRRER WITH HOT PLATE:

Magnetic stirrers are widely used in scientific experiments and industrial production. In addition to their excellent stirring performance, they also have the advantage of being easy to use and clean. Stirring is utilized to produce uniform mixes and improve those mixers. A chemical reaction occurs when liquid or liquid-like substances interact with one another. This reaction causes the substances to aggregate. Mixing equipment is used in most vessels that need to be stirred. The way they're designed, as well as the mixing gear, impact how effectively they combine the components. Magnetic stirring is a process you can use to stir liquids in open and closed systems. This process can be performed under pressure or vacuum over a wide temperature range. Additionally, magnetic stirring can be used with any chemical substance.

Uses:

Magnetic stirrers are used to mix fluids rapidly of various viscosities. They're most often seen in laboratories studying biology and chemistry. Magnetic stirrers are utilized in a variety of applications.

Working:

A magnetic stirrer, often known as a Magnetic mixer, is a machine that mixes ingredients by attracting like charges and repulsing dissimilar ones. A magnetic stirrer uses a rotating magnetic field to stir a non-magnetic liquid in a container. The rotating field is created by a magnet mounted on the stirrer underneath the container. As the magnet rotates, it creates a rotating magnetic field that extends into the liquid.

WEIGHING BALANCE:

A weighing balance is a laboratory instrument that is used to measure the mass or weight of an object. They are commonly used in analytical and research laboratories, as well as in the pharmaceutical and chemical industries, where precise measurements are critical. Weighing balances are also used in commercial settings such as in food processing, jewellery making, and shipping.

A typical weighing balance consists of a platform or pan on which the object being measured is placed, and a beam or sensor that detects the weight of the object. The beam or sensor is connected to a display unit that shows the weight in the desired units, such as grams, milligrams, or ounces.

There are three main types of weighing balances:

- Mechanical balances: measure weight using physical components such as levers and counterweights.
- Analytical balances: These are highly accurate and sensitive balances that can measure weight to within a few thousandths of a gram.
- Digital balances: These balances use electronic sensors to measure weight and digitally display results.

Weighing Balance principle: The principle behind weighing balances is based on the concept of balance of weight. This means that the weight of an object is balanced against a known weight, such as a set of calibrated weights until equilibrium is reached. The balance then displays the weight of the object being measured. In conclusion, weighing balances are essential tools in laboratory and industrial settings where accurate and precise measurements are critical. They come in different types and models, each with its own unique features and capabilities

HOT AIR OVEN:

A hot air oven is a type of dry heat sterilization. Dry heat sterilization is used on equipment that cannot be wet and on material that will not melt, catch fire, or change form when exposed to high temperatures. Moist heat sterilization uses water to boil items or steam them to sterilize and doesn't take as long as dry heat sterilization. Examples of items that aren't sterilized in a hot air oven are surgical dressings, rubber items, or plastic material.

Items that are sterilized in a hot air oven include:

- Glassware (like petri dishes, flasks, pipettes, and test tubes)
- Powders (like starch, zinc oxide, and sulfadiazine)
- Materials that contain oils
- Metal equipment (like scalpels, scissors, and blades)

Principle: Hot air ovens use extremely high temperatures over several hours to destroy microorganisms and bacterial spores. The ovens use conduction to sterilize items by heating the outside surfaces of the item, which then absorbs the heat and moves it towards the centre of the item.

The commonly-used temperatures and time that hot air ovens need to sterilize materials is 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.

AUTOCLAVE:

An autoclave is a moist heat sterilizer as the Moist heat sterilization uses water to boil items or steam them to sterilize with specified pressure. Most of the growth mediums and pipette tips and other biological medias are generally preferred for moist heat sterilization.

Principle: Autoclave works under the principle of Moist Heat Sterilization as it uses high pressure and high temperature for longer periods to sterilize the biological medias and other compounds inorder to kill the bacteria and other microorganisms. Generally the autoclave is maintained at 121°C at 15lbs pressure for 1 Hour

Incubator:

Principle: It depends on the principle of thermoelectricity. The incubator has a thermostat which maintains a constant temperature by creating a thermal gradient. For most the organisms 37°C is the favourable temperature while yeast organisms require 30°C.

LAMINAR AIR FLOW CHAMBER:

Principle: It is an enclosed workstation that is used to create a contamination free work environment through filters to capture all the particles entering the cabinet. These are the most useful for the aseptic cabinets the effluent air is drawn into the face of the user.

In a biosafety cabinet, both the sample and user are protected while in the laminar flow cabinet, only the sample is protected and not the user. Laminar flow cabinets are similar to bio safety cabinets with the only difference being that in laminar flow cabinets the effluent air is drawn into the face of the user.

Micropipette:

A micropipette is acommonyetan essential laboratory instrument used to accurately and precisely transfer volumes of liquid in the microliter range. Micropipettes are available in single channel and multi-channel variants.

- All the other chemicals are procured from Qualizens limited.
- For all the assays the Millipore degraded distilled water has been used.

Characterization of CuO nanoparticles:

FTIR analysis

The chemical composition of the synthesized magnesium nanoparticles was studied by using FTIR spectrometer (Perkin-Elmer LS-55- Luminescence spectrometer). The solutions were dried at 750°C and the dried powders were characterized in the range 4000–400 cm -1 using KBr pellet method

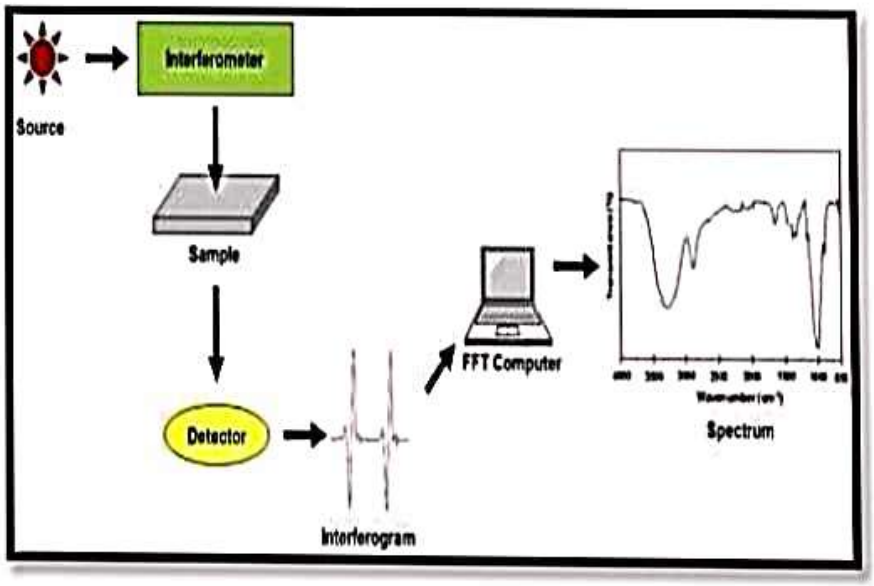


Fig. : FTIR Instrumentation analysis

XRD Analysis

The phase variety and grain size of synthesized silver nanoparticles was determined by X-ray diffraction spectroscopy (Philips PAN analytical). The synthesized silver nanoparticles were studies with CUKα radiation at voltage of 30 kV and current of 20 MA with scan rate of 0.030 /s. Different phases present in the synthesized samples were determined by X′ pert high score software with search and match facility. The particle size of the prepared samples was determined by using Scherrer's equation as follows

$$D \approx 0.9\lambda / \beta \cos 0$$

Where D is the crystal size, λ is the wavelength of X-ray, Θ is the Braggs angle in radians and B is the full width at half maximum of the peak in radians

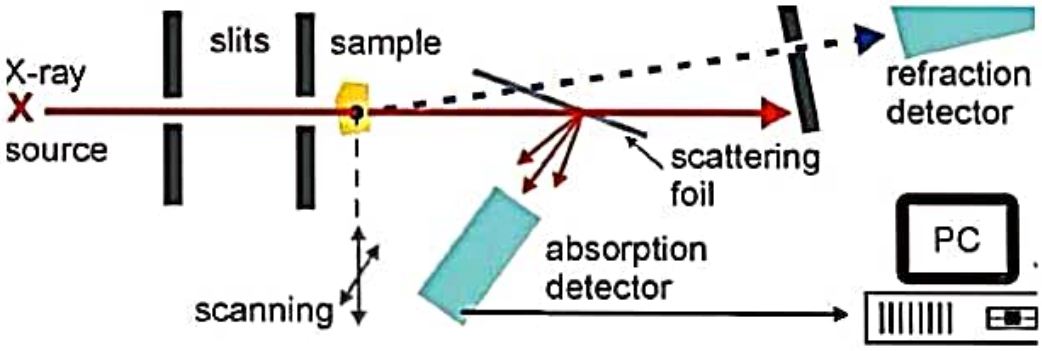


Fig. 6: XRD Instrumentation analysis

SEM (Scanning Electron Microscope)

Scanning electron microscopy (SEM) analysis was carried out using Carl Zeiss Japan, Inodel machine. Thin film of nanoparticle powder sample was prepared on carbon coated tape by adhering small amount of dried fine powder of sample on the grid, excess sample was removed with the help of blotting paper. The film on the SEM grid was allowed to dry by putting it under a mercury lamp for 5 min. The SEM analysis was used to determine the surface structure of biologically synthesized CuO Nanoparticles.

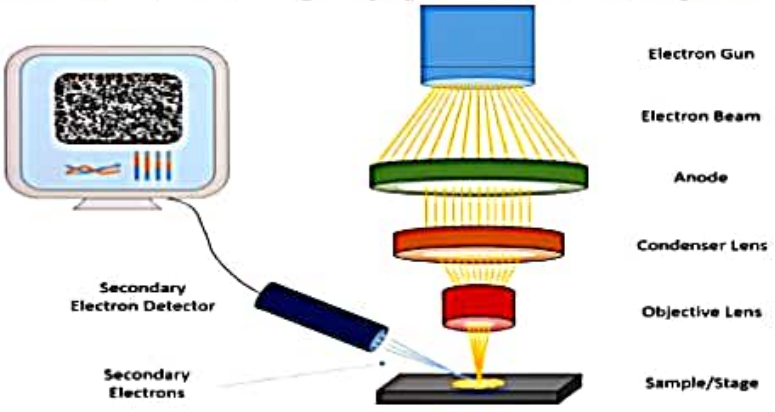


Fig.4: SEM Analysis depict

4. RESULTS AND DISCUSSION

Green Synthesis of Copper Oxide Nanoparticles using Tulasi *(Ocimum sanctum):*

Copper Oxide nanoparticles were synthesized successfully by the green synthesis method using Tulasi *(Ocimum sanctum)* leaf extracts. During exposure to leaf extracts, reduction of copper ions into copper nanoparticles was observed as a result of the colour change from pale Brown colour to biscuit colour. In this method the aqueous leaf extract acts as a solvent with manifold roles as promoter, stabilizer and template for the synthesis of nanoparticles.

Characterization of CuO nanoparticles: Copper oxide nanoparticles obtained were preserved in plastic vials for further characterization. Characterization studies needed to study the exact size, shape and other properties of CuO nanoparticles. In this work I have used XRD and FTIR and SEM analysis to study the CuO nanoparticles.

FT-IR analysis:

To identify the key factors for the copper ion (Cu+) reduction into copper nanoparticles (Cu-NPs), FTIR spectroscopy analyses were carried out. FT-IR analyses show the shifts in the absorbance peak of copper nanoparticles with different points ranging from 561 to 3390cm^{-1} as shown in (Fig. 7). It is evident that there is presence of functional groups such as alkaloids, phenols,halo compounds, and primary and secondary amines in the extract. The IR spectrum of the biosynthesized Cu-NPs showed the peak value at 561,600,679, 1360, 1644, and 3390cm^{-1}. The peak value 561 cm^{-1} relates to the Cu-O bond in the CuO nanostructure group. A peak at 600$cm^{-1}$and 679cm^{-1} relates to the C-I stretch and C-Cl bond in halo compound group. The peak at 1350cm^{-1} was assigned to be C-H bend in the methane group, 1644cm^{-1} relates to the C-C stretch in the aromatic group and peak at 3390cm^{-1} O-H stretch in the primary and secondary amide group. The peaks corresponding to O–H, C=O, C–N, C–H, C=C are the prominent peaks associated with CuO-NPs. Several scientific findings had ascribed the absorption at 3000–3350 cm^{-1} to N–H of amine or O–H of alcohol/phenol. Absorption peaks in the range of 820–880 cm^{-1} have been attributed to aromatic C–H bending. A strong absorption peak at wavelength 2900-3000cm^{-1} was credited to C–H. The absorption band observed at wavelength 1600–700 is traceable to CuO. The absorption band at 1600–1790 are linked to –C=O of carbonyl.

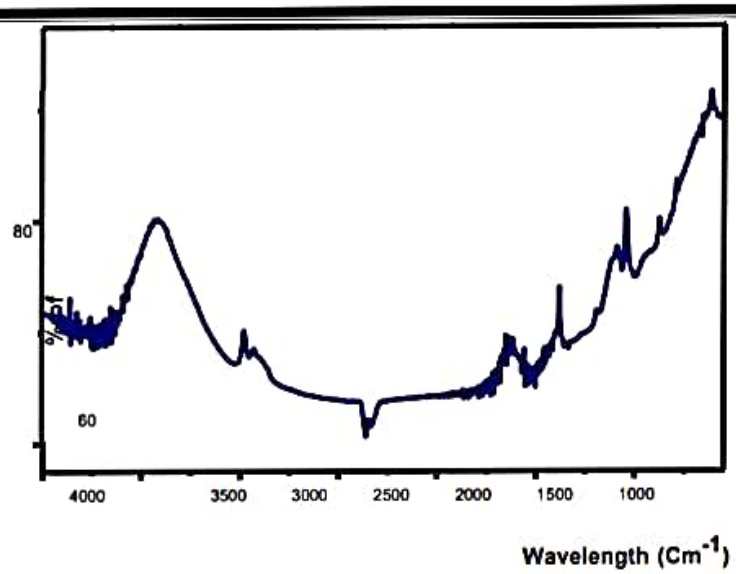


Fig. 7: FTIR analysis of Cu-NPs

XRD Analysis:

XRD technique which is used for the phase determination of crystal structures of the nanoparticles. The XRD analysis of the synthesised particles show characteristic diffraction peaks at 2θ of 32.37, 35.19, 38.49, 48.14, 58.01, 61.31, 66.01, 67.66, 72.37 and 75.19, which were assigned to (110), (11-1), (111), (20-2), (202), (113), (022), (220), (31-2) and (004) planes respectively. From the analysis by XRD, the monoclinic structure of CuO NPs prepared from Azadirachta indica leaf extract was suggested. The monoclinic structure of CuO, so obtained, is then confirmed by comparison with the data provided in MATCH! Software [card no. 96-901-5925] and the cell parameter of the synthesised particle is 4.6832 A°. All the diffraction peaks corresponds to typical monoclinic structure and no other phase was observed. The average crystallite size of CuO nanoparticles was calculated using the Scherrer formula, $D=0.9\lambda/\beta\cos\theta$, where λ is the wavelength of X-ray radiation, β is the full width at half maximum (FWHM) of the peaks at the diffracting angle θ. It was found to be 25 nm indicating its crystalline nature.

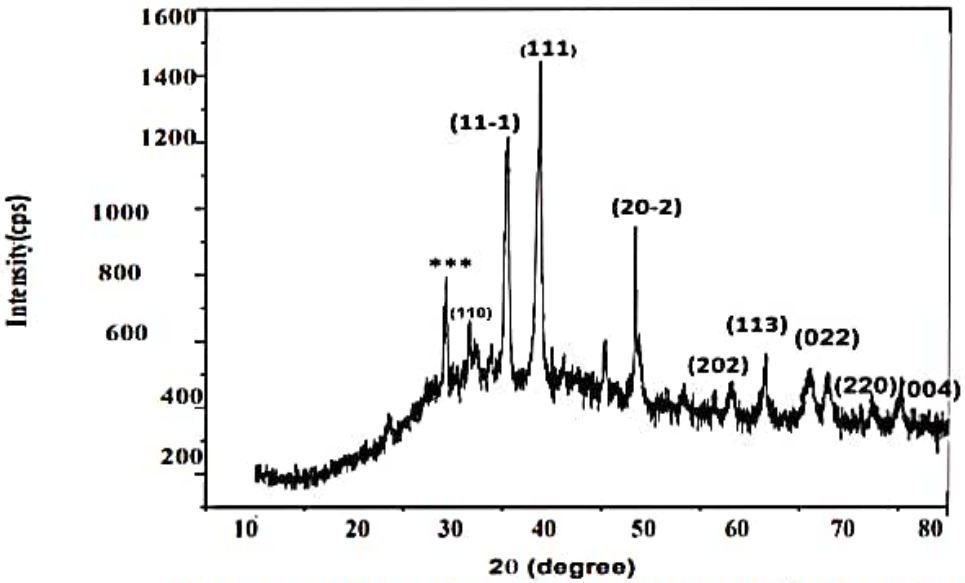


Fig. 8. X-ray diffraction of synthesized CuO NPsSEM analysis:

The technique of scanning electron microscopy is used to visually examine a surface in order to identify contaminants or unidentified particles. For morphological data and particle characterization, SEM analysis is used. The SEM pictures were seen at various magnification settings between 2 nm and 200 nm. The produced nanoparticles were spherical in form and ranged in diameter from 33.6 to 120 nm on average. The biosynthesized CuO NPs produced by Lippia adoensis were reported to have a spherical shape and nanorod shaped structures by (Vinay et al., 2018) using SEM and TEM. According to investigation of P. niruri leaf extract revealed a colour change from pale white to brown and a cylindrical morphology with an average size of 5 nm (Demissie et al., 2020). SEM pictures of produced copper oxide nanoparticles that were aggregated and had particle sizes between 100 and 200 nm (Tahseen Ali Ibrahim et al., 2021).

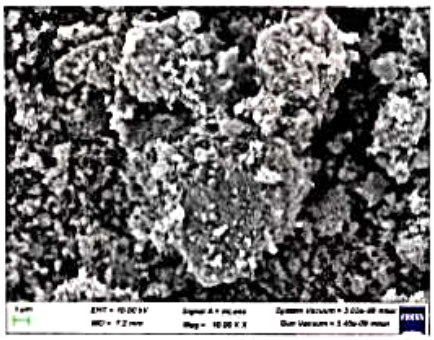


Fig: SEM Image of CuO-NPs

Antimicrobial activity of CuO-NPs:

The antimicrobial property of CuO-NPs towards Gram-positive and Gram-negative bacteria and fungi was tested using the agar well diffusion method. CuO-NPs produced using the green method had strong antibacterial activity against all microbes at concentrations of 800, 500 µg/ml, demonstrating that the dose depends on the mechanism. When the concentration of CuO-NPs against test pathogens increased, so did their antibacterial activity. CuO-NPs had the highest antibacterial activity of 25mm against Escherchia coli at a concentration of 800 µg/mL. It was decided to investigate the antibacterial activity using the well-diffusion method. The strong interaction between silver and the thiol groups found in essential bacterial respiratory enzymes may be the cause of the inhibitory effect of silver compounds. (Dinesh et al., 2022)

S.NO	Test organisms	Zone of inhibition(mm)			
		CuO-NPs (µg/mL)			
		800	600	400	Positive control (Chloramphenicol) 100 µg/mL
1.	*Escherichia coli*	33	28	30	35
2.	*Streptococcus aureus*	30	26	24	27
3.	*Candida*	28	24	30	25

Fig.13: Antibacterial activity of CuO-NPs against *Streptococcus aureus (b) and Escherichia coli(a)*

Fig.14: Antifungal activity of CuO-NPs against Candida

Anti-oxidant activity of CuO-NPs:

Different volumes (2 - 20µl) of CuO-NPs were made up to 40µl with DMSO and 2.96ml DPPH (0.1mM) solution was added. The reaction mixture was incubated in dark condition at room temperature for 20 min. After 20 min, the absorbance of the mixture was read at 517 nm. 3ml of DPPH was taken as control. The % radical scavenging activity of the plant extracts was calculated using the following formula

$$\%RSA = \frac{\text{Abs control} - \text{Abs sample}}{\text{Abs control}} \times 100$$

Where, RSA is the Radical Scavenging Activity; Abs control is the absorbance of DPPH radical + ethanol; Abs sample is the absorbance of DPPH radical + CuO NPs.

Result:

S.NO	DPPH	CuO NPs Solution	Incubation time	OD Values (517nm)
CONTROL	3ml	0	30 minutes	0.72
			1 hour	0.72
SAMPLE	2.96ml	0.06ml	30 minutes	0.66
			1 hour	0.55

Incubation in dark place

5. Conclusions and Recommendations:

Nanotechnology finds extensive applications in nanomedicine, an emerging new field. Nanoparticles can be synthesised by chemical and physical methods but these methods are quite expensive and toxic Use of biological organisms, plant extracts could be an alternative method for production of nanoparticles. The present study reports a green, eco-friendly and cost-effective approach for the synthesis of zinc oxide nanoparticles, using the Tulasi (*Ocimum sanctum*) leaf extract, which acts as a reducing and stabilizing agent . We have also studied the characterization of CuO nanoparticles. FTIR results proved that bioactive compounds responsible for copper bio reduction could be proteins and flavonoids presumed to act as reducing and capping agents for the copper nanoparticles preventing the agglomeration of the particles and thereby stabilizing the nanoparticles. The synthesized nanoparticles are then characterized by using (X-ray diffraction) XRD technique and it is found that the size of particles is about 31 nm. Also, the synthesized nanoparticles exhibit crystalline nature. This method offers a biological technique to synthesize CuO nanoparticles in controlled and precise manner with well-defined diverse sizes and shapes. This study also suggests that green synthesized method can be used as an alternative to the existing chemical and physical methods. More research is needed to shed light on deducing additional details and discerning a more accurate interpretation of the results obtained.

In conclusion green synthesis of CuO-NPs is much more safer and environment friendly than physical and chemical methods. CuO-NP's find application as antimicrobial agent and photocatalyst. The plant based CuO-NPs can become a major field of research and can be used extensively in the food, pharmaceuticals and cosmetic industries. The potential applications of CuO-NPs as antimicrobial agent as well as antifungal agent.

IMAGES









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AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

VARI GUNA SHEKAR

III B.Sc. C.BC.BT

Regd.no 213117121295

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

Submitted to

VISHNU
UNIVERSAL LEARNING

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

BHIMAVARAM-534202

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by **VARI GUNA SHEKAR** with Reg. Number 213117121295 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT
Department of Life Sciences
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This is to certify that Mr. BOYINA TARUN SEKHAR, Regd.No. 213117121251 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF ZINGIBER OFFICINALE PLANT BASED SIVER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director
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Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Tulasi (Ocimum Sanctum) based Copper oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

VASA.DURGA NAGA SAI

III B.Sc. BT.BC.C

Regd.no 213117121296

Under the supervision of

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At

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Submitted to

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Tulasi (Ocimum Sanctum) based Copper oxide nanoparticles" is a bonafide work done by **VASA.DURGA NAGA SAI** with Reg. Number 213117121296 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life Sciences, following APSCHE,

Submitted by

MYPALA RAMA TULASI

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Under the supervision of

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This is to certify that this Internship project work entitled "Antimicrobial and Antioxidant activity of NEEM (*Azardichta indica*) based Copper Oxide nanoparticles" is bonafide work done by MYPALA RAMA TULASI with Reg. Number 213117121274 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. MYPALA RAMA TULASI, Regd.No 213117121274 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF AZADIRACHTA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024..

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director

DIRECTOR
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8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

Antibacterial and Antifungal activity of Hibiscus (*Hibiscus rosa-sinensis*) Based Manganese Oxide nanoparticles

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE

Submitted by

M SRI LAKSHMI SNEHA

III B.Sc. BT.BC.C

Regd.no 213117121273

Under the supervision of

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Hibiscus (Hibiscus rosa-sinensis) based Manganese oxide nanoparticles" is a bonafide work done by **M SRI LAKSHMI SNEHA** with Reg. Number 213117121273 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions BECS Visakhapatnam

Director

DIRECTOR
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Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ocimum sanctum (holy basil) based copper oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

MOHAMMAD UZMA GOUSIA AFFRIN

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This is to certify that this Internship project work is entitle"Antimicrobial and Antioxidant activity of ocimum sanctum(holy basil) based copper oxide nanoparticles" is a bonafide work done by **MOHAMMAD UZMA GOUSIA AFFRIN** with Reg. Number 213117121272 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

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DIRECTOR
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8-6-14, Chinna Waltair
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Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

MANGIPUDI VENKATESWARLU

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This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by MANGIPUDI VENKATESWARLU with Reg. Number 213117121271 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

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8-6-14, Chinna Waltair
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Date: 22-05-24
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AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

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Date: 27-05-24
Place: Visakhapatnam

DECLARATION

I, MACHHA ESWAR, student of Bachelor Science Program with Reg. No.213117121270 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

M. Eswar

Signature of student

MACHHA ESWAR

AN INTERNSHIP REPORT ON

Antibacterial and Antifungal activity of Hibiscus (*Hibiscus rosa-sinensis*) Based Manganese Oxide nanoparticles

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE

Submitted by

M LAKSHMI PRIYA

III B.Sc. BT.BC.C

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Under the supervision of

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Hibiscus (Hibiscus rosa-sinensis) based Manganese oxide nanoparticles" is a bonafide work done by **M LAKSHMI PRIYA** with Reg. Number 213117121269 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. LAKSHMI PRIYA MADABHUSHI, Regd. No. 213117121269 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF HIBISCUS PLANT BASED MANGANESE NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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Bio Enviro Chemical Solutions BECS Visakhapatnam

Date: 27-05-24
Place: Visakhapatnam

An internship Project On

"ISOLATION AND CHARACTERIZATION OF MICROORGANISMS INVOLVED AND USED AS BIO PESTICIDES"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

KUDAKA NAMRATHA

Reg.No:213117121268

Bsc.BT.BC.C

Under the guidance of

Dr.John Dogulas Palleti,M.Sc.Ph.D.

Chief scientist & Research director at Adhya Biosciences Vishakapatnam

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DECLARATION

I hereby declare that the work presented in the dissertation Entitled **ISOLATION AND CHARACTERISATION OF MICROORGANISMS INVOLVED AND USED AS BIO PESTICIDES** is entirely original and carried out by me in **"ADHYA BIOSCIENCES, VISHAKAPATNAM"** Under the supervision and guidance of **Dr.John Dogulas Palleti.** I further

declare that this dissertation has not been submitted to any institution for other degree or diploma.

NAME OF THE STUDENT

KUDAKA NAMRATHA

ACKNOLEDGEMENT

This acknoledgement transcends the reality of formality when I would like to express my deep gratitude and respect to all those people behind the screen who guided, inspired, and helped for the completion of my project.

I express my deep sense of gratitue with immemse pleasure to **Mr.Varaprasad bobbarla & Mrs.Swetha bobbarla (Director of adhya biosciences) and Dr.John Dogulas Palleti(Research director) and Miss.P.Mercy (lab assistant)at ADHYA BIOSCIENCES PVT.LTD., VISHAKAPATNAM** for their inspiring guidance, valuable suggestions, attentions, and encouragement throughout my work.

I wish deep sense of appreciation to **M.E.A.V.V. RAMBABU** garu, **HOD of Lifesciences, B.V. Raju college, Vishnupur, Bhimavaram** for his valuable guidance and suggestions and encouragement throughout my work.

And a special thanks to **Department of Life Sciences and Microbiology.**

I express deep sense of respect and regards to my parents, Family members, classmates, and friends for their positive support through the project work and study.

NAME OF STUDENT

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This is to certify that this Internship project work is entitled **"ISOLATION AND CHARACTERIZATION OF MICROORGANISMS INVOLVED AND USED AS BIO PESTICIDES** is a bonafide work done by **KUDAKA NAMRATAHA** With **Reg. Number 213117121268** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (MB.BT.BC&BTBCC) in B. V. Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

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CERTIFICATE

This is to certify that KUDAKA NAMRATHA final year student of B.Sc.(BT.BC.C) with REGD NO.213117121268 from the Department of Life Sciences, for the study of integrated program B.V.RAJU COLLEGE BHIMAVARAM. She has completed her project in our "**Adhya Biosciences Research Laboratory**" with project work entitled *"ISOLATION AND CHARACTERIZATION OF MICRO-ORGANISMS INVOLVED AND USED AS BIO PESTICIDES."* from Feb To May 2024. During the period of project work, she has shown keen interest in carrying out the above knowledge in the related work and has acquired work.

We wish her all the best in her future assignments.

P. John Dogules
15/May/2024

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Registration Number : 98209
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Udyog Aadhaar Registration : AP10E0017600
Import Export Registration : AA0CA2512N
An ISO Certified Number : 3050230513360
Trade Mark Number : 5936862
GST Registration Number : 37AA0CA2512N2ZE

An internship Project On

"REGULATORY ASPECTS OF BIOTECHNOLOGY & PHARMACEUTICAL DERIVED PRODUCTS & ITS APPLICATIONS"

A Project Report Submitted to Adikavi Nannaya University in Pa rtial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

K.sushma

Reg.No:213117121267

BT.BC.C

Under the guidance of

Mr. Masihuddin Md, Asst. General Manager (FDA RA)

MYLAN LABORATORIES LIMITED

Gachibowli, Hyderabad.

VISHNU
UNIVERSAL LEARNING

B.V. RAJU COLLEGE

Vishnupur, Bhimavaram.

Mylan Laboratories Limited
Plot No. 564/A/22, Road No. 92. Jubilee Hills
Hyderabad - 5OO 096, Telangana, India
Tel: •91 -40-30866666, Fax: 30866699
Email: mylan.india@viatris.c0m
Web: https://www.viafris.comYen in/Im/India
CINU24Z31TG1984PLC005146
A Vlatris Company

May 17, 2024

CERTIFICATE

This is to certify that **MS. KOYYE SUSHMA,** pursuing final year **B.5c(BTBCC)** with REGD.NO **213117121267** from **B.V Raju College, Bhimavaram,** has undergone the internship training at **MYLAN LABORATORIES LIMITED** from "**13th March 2024 to 12th MAY 2024.**

Ms.Riya Florence has successfully completed a project titled "**Regulatory aspects of Biotechnology & Pharmaceuticals derived products and its application**", under the guidance of **Mr Masihuddin Md, Asst. General Manager (FDF RA).**

She has maintained the requisite standards that were expected.

We wish her the best of luck in her future endeavors.

Regards,

Dr. N. Malllkharjun Rao
Head of HR - API & OSD Ops India

Mylan Laboratories Limited
Plot No. 564/A/22, Road No. 92. Jubilee Hills
Hyderabad - 5OO 096, Telangana, India
Tel: •91 -40-30866666, Fax: 30866699
Email: mylan.india@viatris.c0m
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CIN: U24Z31TG1984PLC005146
A Vlatris Company

VISHNU
NIVERSAL LEARNING

B. V. RAJU COLLEGE

VISHNUPUR, BHIMAVARM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "REGULATORY ASPECTS OF BIOTECHNOLOGY & PHARMACEUTICAL DERIVED PRODUCTS AND ITS APPLICATION" is a bonafide work done by koyye.sushma With **Reg. Number 131117121267**submitted in partial fulfilment of the work for the **Degree of Bachelor Science (BTBCC)** in **B. V. Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT
Department Of Life Sciences
B.V Raju College
Bhimavaram

EXAMINERS:

EXTERNAL:

INTERNAL:

An Internship Project On

"QUALITY OF PHARMACUETICAL WATER, ENVIRONMENTAL MONITORING, DRUG SUBSTANCE MICROBIAL ATTRIBUTES ASSESSMENTS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of **Bachelor of Science [B.Sc.]**

Submitted by

KORUKONDA RAMYA SAI SRI

Reg.No:213117121266

BT.BC.C

Under the guidance of

Mohammad Iqbal Ali Mohiuddin

Sr. Manager- Microbiology(QC)

Sr. Manager of Microbiology laboratory in Quality Control Department at MSN Unit –2, Oncology- Kardanur

MSN Unit – 2, Oncology, Kardanur- Patancheru, Hyderabad

VISHNU
UNIVERSAL LEARNING

DEPARTMENT OF LIFE SCIENCE

B.V.RAJU COLLEGE

VISHNU
UNIVERSAL LEARNING

VISHNUPUR, BHIMAVARM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **"QUALITY OF PHARMACUETICAL WATER, ENVIRONMENTAL MONITORING, DRUG SUBSTANCE MICROBIAL ATTRIBUTES ASSESSMENTS"** is a bonafide work done by **KORUKONDA RAMYA SAI SRI** With **Reg. Number: 213117121266** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (MB.BT.BC & BT.BC.C)** in **B.V.Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT
Department Of Life Sciences
B.V Raju College
Bhimavaram

EXAMINERS:

EXTERNAL:

INTERNAL:

MSN Laboratories Private Limited
MSN House, Plot No.: C-24,
Sanath Nagar Industrial Estate, Sanath Nagar,
Hyderabad, Telangana, Pincode: 500018. India.
CIN: U24239TG2003PTC041583
Phone: +91-40-30438600 Fax: +91-40-30438798

Date: 21-05-2024

CERTIFICATE

This is to certify that **Ms.Korukonda Ramya Sai Sri (Hall Ticket No.: 213117121266),** pursuing 6th Semester B.Sc (Bt.Bc.C) from B.V.Raju Degree college has carried out her internship program in our **Microbiology** Department from **06th March 2024 to 21st May 2024.**

During her tenure she is found to be sincere, hardworking and punctual in her Industrial training.

We wish her every success in future endeavors.

Yours Sincerely,

For MSN Laboratories Pvt.Ltd.

Chanakya Kanta
HR Department.

AN INTERNSHIP PROJECT ON

R&D DEPARTMENT

"R&D PROCESS AND SEARCH AND DEVELOPMENT"

BACHELOR OF SCIENCE [B.SC.]

SUBMITTED BY

K.SUPRIYA

REG.NO:213117212265

BT BC C

UNDER THE GUIDANCE OF

DR.K.NAVEEN KUMAR REDDY M.SC,PH.D

DR.RAGHAVENDRA REDDY M.SC,PH.D

R&D Department & Program Coordinator at pashmylaram
PATANCHERUVU -HYDERABAD

PASHMYLARAM PATANCHERUVU-HYDERABAD

VISHNU

UNIVERSAL LEARNING

DEPARTMENT OF LIFE SCIENCES

B.V. RAJU COLLEGE

VISHNUPUR,BHIMAVARAM.

B.V.RAJU COLLEGE

VISHNU
UNIVERSAL LEARNING

VISHNUPUR, BHIMAVARAM-53420

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "R&D DEPARTMENT OF OUR RESEARCH AND DEVELOPMENT,REPRESENT THE ACTIVITIES COMPANIES UNDERTAKE TO INNAVATE AND INTRODUCE THE NEW PRODUCTS AND SERVICES OR TO IMPROVE THEIR EXISTING OFFERINGS"

work done by k.supriyaWith Reg. number 213117121265submitted in partial fulfillment of the work for the Degree of Bachelor Science (MB BT BC & BTBCC) in B.V.Raju college,vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT
Department Of Life Science
B.V.Raju College
Bhimavaram.

Head of the Department
Dept. of Life Science
B.V. RAJU COLLEGE
Vishnupur, Bhimavaram-534 202

B.V. RAJU COLLEGE
Vishnupur
W.G.Dist.
A.P.-534202
BHIMAVARAM

EXAMINERS :

EXTERNAL:

INTERNAL :

MSN Laboratories Private Limited
MSN House, Plot No.: C-24,
Sanath Nagar Industrial Estate, Sanath Nagar,
Hyderabad, Telangana, Pincode: 500018. India.
CIN: U24239TG2003PTC041583
Phone: +91-40-30438600 Fax: +91-40-30438798

Date: 07.05.2024

CERTIFICATE

This is to certify that **Ms. K Supriya (Roll No: 213117121265)** pursuing B. Sc Chemistry in B.V. Raju College (Adikavi Nannaya University), Hyderabad has carried out her Internship in **"Synthesis and Characterisation of Isosulfan Blue"** in R&D department at R&D Center, MSN Laboratories Pvt. Ltd., Hyderabad from **26.02.2024 to 07.05.2024**

During her tenure, she is found to be sincere, hardworking and punctual in her Industrial training.

We wish her every success in her future endeavors.

Yours Sincerely,

For MSN Laboratories Pvt. Ltd.
R&D Center

MSN Laboratories Pvt. Ltd. (R&D Center) Pashamylaram

K Rajesh Kumar
Manager - HR

Center, Plot No. 12, Phase - IV, Sy. No. 119 to 140, 258, 275 to 280, IDA Pashamylaram, Pashamylaram (Village)
Patancheru (Mandal), Sangareddy District, Telangana, Pincode: 502 307, India.
Tel: +91-8455-694500 Fax: +91-8455-694599 Alternate Fax: +91-40-30438799

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

BACHELOR OF SCIENCE [B.Sc.]

Submitted By

KANKATALA.V.L.VYSHNAVI

Reg.No : 213117121264

C.BT.BC

Under the guidance of:

S.N.PRASAD (PROPRITER)

SURESH(MLT)

DILEEP(MLT)

SRI BALAJI CLINICAL LAB

VISHNU

UNIVERSAL LEARNING

B.V. RAJU COLLEGE,

VISHNUPUR, BHIMAVARAM

VISHNU
UNIVERSAL LEARNING

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM - 534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **"BIOCHEMISTRY ANALYSIS"** is a Bonafide work done by K.V.L.VYSHNAVI With Reg. number 213117121264 submitted in partial fulfillment of the work for the Degree of Bachelor Science (C.BT.BC) in B.V. Raju college, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE:

HEAD OF THE DEPARTMENT
DEPARTMENT OF LIFE SCIENCES.
B.V.RAJU COLLEGE,
BHIMAVARAM.

Head of the Department
Dept. of Life Science
B.V. RAJU COLLEGE
Vishnupur, Bhimavaram-534 202

EXAMINERS:

EXTERNAL:

INTERNAL:

SRI BALAJI CLINICAL LABORATORY

TO WHOMESOEVER IT MAY CONCERN

This is to certify that *ms.Kankatala Veera Lakshmi Vyshnavi,* Reg No:213117121264- B.Sc Biotechnology,Biochemistry,Chemistry - B.V.Raju college -Vishnupur-Bhimavaram, A.P-534202, has undergone industrial training in CLINICAL PATHOLOGY in our laboratory from 01-march-2024 to 01-may-2024

With Best Wishes,

For Sri Balaji Clinical laboratory.

lab incharge

533223

SRI BALAJI CLINICAL LABORATORY

TR NO:46\KNS\2022-23

MAIN ROAD;KOTHAPETA- 533223

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

BACHELOR OF SCIENCE [B.Sc.]

Submitted By

KANCHARLAPALLI SIVA KUMAR

Reg.No : 213117121262

C.BT.BC

Under the guidance of:

S.N.PRASAD SIR (LAB INCHARGE)

SURESH(MLT)

DILEEP(MLT)

SRI BALAJI CLINICAL LABS

VISHNU

UNIVERSAL LEARNING

B.V. RAJU COLLEGE,

VISHNUPUR, BHIMAVARAM

VISHNU
UNIVERSAL LEARNING

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM - 534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "BIOCHEMISTRY ANALYSIS" is a Bonafide work done by K.SIVA KUMAR With Reg. number 213117121262 submitted in partial fulfillment of the work for the Degree of Bachelor Science (C.BT.BC) in B.V. Raju college, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE:

HEAD OF THE DEPARTMENT
DEPARTMENT OF LIFE SCIENCES.
B.V. RAJU COLLEGE,
BHIMAVARAM.

Head of the Department
Dept. of Life Science
VISHNU B.V. RAJU COLLEGE
Bhimavaram-534 202

EXAMINERS:

EXTERNAL:

INTERNAL:

SRI BALAJI CLINICAL LABORATORY

TO WHOMESOEVER IT MAY CONCERN

This is to certify that *mr.Kancharlapalli Siva Kumar,* Reg No:213117121262 - B.Sc-Biotechnology,Biochemistry, Chemistry,- B.V.Raju college -Vishnupur-Bhimavaram, A.P-534202, has undergone industrial training in CLINICAL PATHOLOGY in our laboratory from 15-march-2024 to 15-may-2024

With Best Wishes,

For Sri Balaji Clinical laboratory.

lab incharge

533223

SRI BALAJI CLINICAL LABORATORY

TR NO:46\KNS\2022-23

MAIN ROAD;KOTHAPETA- 533223

An Internship Project On

"QUALITY OF PHARMACUETICAL WATER, ENVIRONMENTAL MONITORING, DRUG SUBSTANCE MICROBIAL ATTRIBUTES ASSESSMENTS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

KADALI KEERTHI PRASANNA

Reg.No:213117121260

BT.BC.C

Under the guidance of

Mohammad Iqbal Ali Mohiuddin

Sr. Manager- Microbiology(QC)

Sr. Manager of Microbiology laboratory in Quality Control Department at MSN Unit –2, Oncology- Kardanur

MSN Unit – 2, Oncology, Kardanur- Patancheru, Hyderabad

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DEPARTMENT OF LIFE SCIENCE

B.V.RAJU COLLEGE

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VISHNUPUR, BHIMAVARM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **"QUALITY OF PHARMACUETICAL WATER, ENVIRONMENTAL MONITORING, DRUG SUBSTANCE MICROBIAL ATTRIBUTES ASSESSMENTS"** is a bonafide work done by **KADALI KEERTHI PRASANNA** With **Reg. Number: 213117121260** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (MB.BT.BC & BT.BC.C)** in **B.V.Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

INTERNAL GUIDE

Head of the Department
Dept. of Life Science
B.V. RAJU COLLEGE
Vishnupur, Bhimavaram-534 202

HEAD OF THE DEPARTMENT

Department Of Life Sciences

B.V Raju College

Bhimavaram

B.V. RAJU COLLEGE
Vishnupur
W.G.Dist.
A.P.-534202
BHIMAVARAM

EXAMINERS:

EXTERNAL:

INTERNAL:

MSN Laboratories Private Limited
MSN House, Plot No.: C-24,
Sanath Nagar Industrial Estate, Sanath Nagar,
Hyderabad, Telangana, Pincode: 500018. India.
CIN: U24239TG2003PTC041583
Phone: +91-40-30438600 Fax: +91-40-30438798

Date: 21-05-2024

CERTIFICATE

This is to certify that **Ms.Kadali Keerthi Prasanna (Hall Ticket No.: 213117121260),** pursuing 6th Semester B.Sc (Bt.Bc.C) from B.V.Raju Degree college has carried out her internship program in our **Microbiology** Department from **06th March 2024 to 21st May 2024.**

During her tenure she is found to be sincere, hardworking and punctual in her Industrial training.

We wish her every success in future endeavors.

Yours Sincerely,

For MSN Laboratories Pvt.Ltd.

Chanakya Kanta
HR Department.

AN INTERNSHIP PROJECT ON

INDUSTRIAL TRAINING IN QUALITY CONTROL- MICROBIOLOGY

BACHELOR OF SCIENCE [B.SC.]

SUBMITTED BY

NANDITHA GUTAM

REG.NO: 213117121259

BT BC C

UNDER THE GUIDANCE OF

DR. MYTHRI Msc. PHD

ANVSR ANJANEYULU

AUROBINDO PHARMA LTD UNIT:3

BACHUPALLY, BACHUPALLY (MANDAL), MEDCHAL – MALKAJGIRI DISTRICT. TELANGANA STATE.

VISHNU

UNIVERSAL LEARNING

DEPARTMENT OF LIFE SCIENCES

B.V. RAJU COLLEGE

VISHNUPUR,BHIMAVARAM.

VISHNU
UNIVERSAL LEARNING

B.V.RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "INDUSTRIAL TRAINING IN QUALITY CONTROL IN MICROBIOLOGY" Is a bonafide work done by NANDITHA GUTAM With Reg. no: 213117121259 Submitted in partial fulfillment of the work for the Degree of Bachelor Science MB BT BC & BTBCC in B.V.Raju college,vishnupur, Bhimavaram during the academic year 2020-2023.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT
Department Of Life Science
B.V. Raju College
Bhimavaram.

EXAMINERS :

EXTERNAL:

INTERNAL :

B.V. RAJU COLLEGE BHIMAVARAM

AUROBINDO

20th Apr 2024

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. G. Nanditha, Reg No: 213117121259 -B.Sc.-Biotechnology - B V Raju College-VISHNUPUR-BHIMAVARAM, A.P-534202.** has undergone Industrial Training in **Quality Control-Microbiology** Department **Unit-III** in our organization from **29-Feb-2024 to31-Mar-24.**

During this period, we found her to be hard-working and committed and we wish her all the best in her future endeavors.

With Best Wishes.

For Aurobindo Pharma Limited

AUROBINDO PHARMA LIMITED UNIT-III

ANVSR Anjaneyulu
Assistant Manager-HR

An internship Project On

"REGULATORY ASPECTS OF BIOTECHNOLOGY & PHARMACEUTICAL DERIVED PRODUCTS & ITS APPLICATIONS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

G. RIYA FLORENCE

Reg.No:213117121258

BT.BC.C

Under the guidance of

Mr. Masihuddin Md, Asst. General Manager (FDA RA)

MYLAN LABORATORIES LIMITED

Gachibowli, Hyderabad.

VISHNU
UNIVERSAL LEARNING

B.V. RAJU COLLEGE

Vishnupur, Bhimavaram.

VIATRIS

Mylan Laboratories Limited
Plot No. 564/A/22, Road No. 92. Jubilee Hills
Hyderabad - 500 096, Telangana, India
Tel: +91 -40-30866666, Fax: 30866699
Email: mylan.india@viatris.c0m
Web: https://www.viafris.comYen in/lm/India
CIN: U24Z31TG198APLC005146
A Viatris Company

May 17, 2024

CERTIFICATE

This is to certify that **MS. GOLLAMANDALA RIYA FLORENCE,** pursuing final year **B.Sc(BTBCC)** with REGD.NO **213117121258** from **B.V Raju College, Bhimavaram,** has undergone the internship training at **MYLAN LABORATORIES LIMITED** from **"13" March 2024 to 12" MAY 2024.**

Ms.Riya Florence has successfully completed a project titled **"Regulatory aspects of Biotechnology & Pharmaceuticals derived products and its application"**, under the guidance of **Mr Masihuddin Md, Asst. General Manager (FDF RA).**

She has maintained the requisite standards that were expected.

We wish her the best of luck in her future endeavors.

Regards,

Dr. N. Mallikharjun Rao
Head of HR - API & OSD Ops India

Mylan Laboratories Limited
Plot No. 564/A/22, Road No. 92. Jubilee Hills
Hyderabad - 500 096, Telangana, India
Tel: +91 -40-30866666, Fax: 30866699
Email: mylan.india@viatris.c0m
Web: https://www.viafris.comYen in/lm/India
CIN: U24Z31TG1984PLC005146
A Viatris Company

B. V. RAJU COLLEGE

VISHNU
UNIVERSAL LEARNING

VISHNUPUR, BHIMAVARM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "REGULATORY ASPECTS OF BIOTECHNOLOGY & PHARMACEUTICAL DERIVED PRODUCTS AND ITS APPLICATION" is a bonafide work done by **Gollamamdala Riya Florence** With **Reg. Number 213117121258** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (BTBCC)** in **B. V. Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT

Head of the Department
Dept. of Life Science
B.V. RAJU COLLEGE
Vishnupur, Bhimavaram-534 202

Department Of Life Sciences

B.V Raju College

Bhimavaram

EXAMINERS:

EXTERNAL:

INTERNAL:

B.V. RAJU COLLEGE
Vishnupur
W.G.Dist.
A.P.-534202
BHIMAVARAM

AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BOYINA TARUN SHEKHAR

III B.Sc. C.BC.BT

Regd.no 213117121251

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

Submitted to

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

BHIMAVARAM-534202

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by **GEDALA KRISHNAMA NAIDU** with Reg. Number 213117121256 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT

Department of Life Sciences

B.V Raju College

Bhimavaram.

EXAMINERS:

EXTERNAL:

INTERNAL:

BECS Bio Enviro Chemical Solutions

An ISO 9001:2015 certified laboratory
NSIC No: NSIC/GP/VSP/2021/91277
Labour licence No. IRE012203014182
APPCB: PCB/ROVSP/BMW/HCE-/2022
Web: https://bioenvirochemical.com

Mobile : +91 888 600 9370
MSME No: UDYAM-AP-10-0013612
GST No: 37FWLPB2194C1ZL
DSIR (under evaluation)
e-Mail: bioenvirochemical@gmail.com

CERTIFICATE

This is to certify that Mr. GEDALA KRISHNAMA NAIDU, Regd. No. 213117121256 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF GUAVA PLANT BASED ALUMINIUM NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

Skill AP APSSDC

N·S·D·C National Skill Development Corporation Transforming the skill landscape

Skill India कौशल भारत - कुशल भारत

DECLARATION

I, GEDALA KRISHNAMA NAIDU, student of Bachelor Science Program with Reg. No.213117121256 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

G.K Naidu

Signature of student

GEDALA KRISHNAMA NAIDU

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

GANDABOINA JAHNAVI

Roll No. 213117121255

Group: C.BC.BT LIFE SCIENCES

VISHNU
UNIVERSAL LEARNING

UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

BECS

BECS Bio Enviro Chemical Solutions

ISO 9001:2015 certified laboratory
IC No: NSIC/GP/VSP/2021/91277
our licence No. IRE012203014182
PCB: PCB/ROVSP/BMW/HCE-/2022
b: https://bioenvirochemical.com

Mobile : +91 888 600 9370
MSME No: UDYAM-AP-10-0013612
GST No: 37FWLPB2194C1ZL
DSIR (under evaluation)
e-Mail: bioenvirochemical@gmail.com

CERTIFICATE

This is to certify that Ms. GANDABOINA JAHNAVI, Regd. No. 213117121255 of partment of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-ITRO ANALYSIS OF MANGIFERA INDICA PLANT BASED COPPER NANOPARTICLES .S ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, alkol from 15-02-2024 to 15-05-2024.

he overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

VISHNU B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM 534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based copper oxide nanoparticles** is a bonafide work done by **G.jahnavi** .with Reg. Number **21311721255** submitted in partial fulfilment of the work for the Degree of Bachelor of Science) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT

Dept. of Life Science
VISHNU B.V. RAJU COLLEGE
Vishnupur, Bhimavaram-534 202

Department of Life Sciences
B.V Raju College
Bhimavaram.

EXAMINERS:

B.V. RAJU COLLEGE
Vishnupur
W.G. Dist.
A.P.-534202
BHIMAVARAM

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ginger (Zingerber officinale) based Silver oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

DAVALA RENUKA

III B.Sc.BC.BT.C

Regd.no 213117121254

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

Submitted to

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Ginger(Zingerber officinale) based Silver oxide nanoparticles" is a bonafide work done by DAVALA RENUKA, with Reg. Number 213117121254 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BC.BT.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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Vishnupur W.G.Dist. A.P.-534202

EXAMINERS:

EXTERNAL:

INTERNAL:

BECS Bio Enviro Chemical Solutions

An ISO 9001:2015 certified laboratory
NSIC No: NSIC/GP/VSP/2021/91277
Labour licence No. IRE012203014182
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Web: https://bioenvirochemical.com

Mobile : +91 888 600 9370
MSME No: UDYAM-AP-10-0013612
GST No: 37FWLPB2194C1ZL
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e-Mail: bioenvirochemical@gmail.com

CERTIFICATE

This is to certify that Ms. DAVALA RENUKA, Regd.No. 213117121254 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF ZINGIBER OFFICINALE PLANT BASED SIVER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ginger (Zingerber officinale)based silver oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

DASARI NAGA AMBIKA

III B.Sc. BT.BC.C

Regd.no 213117121253

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

VISHNU
UNIVERSAL LEARNING

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Ginger (Zingerber officinale)based Silver oxide nanoparticles" is a bonafide work done by **DASARI NAGA AMBIKA,**with Reg. Number 213117121253 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. DASARI NAGAAMBIKA, Regd.No. 213117121253 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF ZINGIBER OFFICINALE PLANT BASED SIVER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

BACHELOR OF SCIENCE [B.Sc.]

Submitted By

DANDU RAJESH VARMA

Reg.No : 213117121252

C.BT.BC

Under the guidance of:

S.N.PRASAD SIR (LAB INCHARGE)

SURESH(MLT)

DILEEP(MLT)

SRI BALAJI CLINICAL LABS

VISHNU

UNIVERSAL LEARNING

B.V. RAJU COLLEGE,

VISHNUPUR, BHIMAVARAM

SRI BALAJI CLINICAL LABORATORY

TO WHOMESOEVER IT MAY CONCERN

This is to certify that *mr.Dandu Rajesh Varma,* Reg No:213117121252 - B.Sc-Biotechnology,Biochemistry, Chemistry,- B.V.Raju college -Vishnupur-Bhimavaram, A.P-534202, has undergone industrial training in CLINICAL PATHOLOGY in our laboratory from 15-march-2024 to 15-may-2024

With Best Wishes,

For Sri Balaji Clinical laboratory.

lab incharge

533223

SRI BALAJI CLINICAL LABORATORY

TR NO:46\KNS\2022-23

MAIN ROAD;KOTHAPETA- 533223

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UNIVERSAL LEARNING

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM - 534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "BIOCHEMISTRY ANALYSIS" is a Bonafide work done by D.RAJESH VARMA With Reg. number 213117121252 submitted in partial fulfillment of the work for the Degree of Bachelor Science (C.BT.BC) in B.V. Raju college, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE:

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B.V. RAJU COLLEGE,
BHIMAVARAM.

EXAMINERS:

EXTERNAL:

INTERNAL:

AN INTERNSHIP REPORT ON

" Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles "

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

BAISETTI SAI MANIKANTA

III B.Sc. C.BC.BT

Regd.no 213117121249

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.
At

Bio-Enviro Chemical Solutions

Submitted to

VISHNU
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DEPARTMENT OF LIFESCIENCES
B.V. RAJU COLLEGE
BHIMAVARAM-534202

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by **BAISETTI SAI MANIKANTA** with Reg. Number 213117121249 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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CERTIFICATE

This is to certify that Mr. BAISETTI SAI MANIKANTA, Regd. No. 213117121249 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF GUAVA PLANT BASED ALUMINIUM NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life sciences, following APSCHE,

Submitted by

B.NAGA JAYA SAI SREE

Reg.no: 213117121248

III B.Sc.BT.BC.C

Under the supervision of

Dr. B. Satish Mohan,

Director,

BECS. AT

Bio-Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

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DEPARTMENT OF LIFE SCIENCE

B.V. RAJU COLLEGE

Vishnupur, Bhimavaram.

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFE-SCIENCE

CERTIFICATE

This is to certify that this Internship project work entitled "Antimicrobial and Antioxidant Activity of Azadirchta incida (neem) based copper oxide nanoparticles" is bonafide work done by B.NAGA JAYA SAI SREE with Reg. Number 213117121248 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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GST No: 37FWLPB2194C1ZL
DSIR (under evaluation)
e-Mail: bioenvirochemical@gmail.com

CERTIFICATE

This is to certify that Ms. V NAGA JAYA SAI SREE, Regd.No. 213117121248 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF AZADIRACHTA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

An internship Project On

" Isolation and identification of bacteria from food vendors and vegetables "

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of **Bachelor of Science [B.Sc.]**

Submitted by

VEGESNA JYOTSNA SAI SRI

Reg.No:213117121300

BSC.BT.BC.C

Under the guidance of

Dr.John Dogulas Palleti, M.Sc.,Ph.D.

Chief scientist & Research director at Adhya biosciences Visakhapatnam

ADHYA BIOSCIENCES , maharani peta, visakhapatnam.

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VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **"Isolation and identification of bacteria from food vendors and vegetables"** is a bonafide work done by **VEGESNA JYOTSNA SAI SRI** With **Reg. Number 213117121300** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (MB.BT.BC&BTBCC)** in **B. V. Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

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Vishnupur, Bhimavaram-534 202

B.V. RAJU COLLEGE
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W.G.Dist.
A.P.-534202
BHIMAVARAM

EXAMINERS:

EXTERNAL:

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Adhya Biosciences Pvt.Ltd.
(Research & Training Institute of Life Sciences)
RR Towers, KGH Up Road, Jagadamba Jn., Maharani Peta,Visakhapatnam,
Andhra Pradesh-530002, INDIA.
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CERTIFICATE

This is to certify that VEGESNA JYOTSNA SAI SRI final year student of B.Sc,(BT.BC.C) with REGD NO.213117121300 from the Department of Life Sciences, for the study of integrated program B.V.RAJU COLLEGE BHIMAVARAM. She has completed her project in our "**Adhya Biosciences Research Laboratory**" with project work entitled *"ISOLATION AND IDENTIFICATION OF BACTERIA FROM FOOD VENDORS AND VEGETABLES."* from Feb to May 2024. During the period of project work, she has shown keen interest in carrying out the above knowledge in the related work and has acquired work.

We wish her all the best in her future assignments.

P. John Douglas
15/May/2024

Dr. JOHN DOGULAS PALLETI
M.Sc., Ph.D.
Chief Scientist & Research Director
ADHYA BIOSCIENCES
VISAKHAPATNAM
Ph:9399917654,Email: drjohndpalleti@gmail.com

Adhya Biosciences Pvt Ltd • Visakhapatnam •

Startup India Approval No : DIPP33648
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An ISO Certified Number : 305023051336Q
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GST Registration Number : 37AA0CA2512N2ZE

AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

VEERAMALLU SARASWATHIRAO

III B.Sc. C.BC.BT

Regd.no 213117121299

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

Submitted to

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

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VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by VEERAMALLU SARASWATHIRAO with Reg. Number 213117121299 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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Department of Life Sciences
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GST No: 37FWLPB2194C1ZL
DSIR (under evaluation)
e-Mail: bioenvirochemical@gmail.com

CERTIFICATE

This is to certify that Ms. VEERAMALLU SARASWATHI RAO, Regd. No. 213117121299 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF GUAVA PLANT BASED ALUMINIUM NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Date: 27-05-24
Place: Visakhapatnam

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

BACHELOR OF SCIENCE [B.Sc.]

Submitted By

V.DHARMA TEJAS VARMA

Reg.No : 213117121298

C.BT.BC

Under the guidance of:

KJAGADEESH SIR (LAB INCHARGE)

P.DEVI(MLT)

V.JYOTSNA(MLT)

J.M.DIAGNOSTIC CENTER

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B.V. RAJU COLLEGE,

VISHNUPUR, BHIMAVARAM

JYOTHIRMAYI
DIAGNOSTIC CENTRE

01-05-2024

EXPERIENCE CERTIFICATE

This is to certify that Mr. **VATSAVAI DHARMATEJAS VARMA** final year Student of B.Sc. (BT.BC.C) with REGISTER NO:213117121298 from the Department of Life Sciences. Has worked as Assistant Lab Technician at Jyothirmayi Diagnostic Centre, Bhimavaram

From 01-02-2024 to 30-04-2024.

We Wish Mr. V. Dharma Tejas Varma all the best and express our gratitude for their valuable contribution during their internship at. Jyothirmayi Diagnostic Center.

THANK YOU

Best Regards,

Cell: 9397[illegible] 08816-238882.
JYOTHIRMAYI DIAGNOSTIC CENTRE
Regd. No. 423/2014.
Near: R.T.C. Depot,
BHIMAVARAM-534 201. W.G.Dt., A.P.

VISHNU
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B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM - 534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "BIOCHEMISTRY ANALYSIS" is a Bonafide work done by V.DHARMA TEJAS VARMA With Reg. number 213117121298 submitted in partial fulfillment of the work for the Degree of Bachelor Science (C.BT.BC) in B.V. Raju college, Vishnupur, Bhimavaram during the academic year 2021-2024.

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Vishnupur, Bhimavaram-534202

EXAMINERS:

EXTERNAL:

INTERNAL:

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ocimum sanctum (holy basil) based copper oxide nanoparticles"

An internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

VASA GOPIKA

III B.Sc. BT.BC.C

Regd.no 213117121297

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

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VISHNUPUR, BHIMAVARAM-534202

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CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of ocimum sanctum(holy basil) based copper oxide nanoparticles" is a bonafide work done by **VASA GOPIKA** with Reg. Number 213117121297 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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CERTIFICATE

This is to certify that Ms. VASA GOPIKA, Regd.No. 213117121297 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF OCIMUM SANCTUM PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

DECLARATION

I, VASA GOPIKA, student of Bachelor Science Program with Reg. No.213117121297 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

Signature of student

VASA GOPIKA

ACKNOWLEDGMENT

I would like to thank **Dr. B. Satish Mohan sir, Managing Director** of Bio Enviro Chemical Solutions for giving us this wonderful opportunity for the 3 Month Apprenticeship in their institution.

I would like to express my sincere gratitude to **Dr. I. R. Krishnam Raju, Principal**, B. V. Raju college, Bhimavaram for giving the opportunity to complete my community service project.

I am also thankful to **Ch. S. V. Satyanarayana, Vice principal**, B. V. Raju college, Bhimavaram for giving this opportunity.

I am highly indebted to **Dr. P. Seetharam sir, Department of Chemistry** for his guidance and constant supervision as well as for providing necessary information regarding the project and for their support in completing the project. His constant guidance and willingness to share his vast knowledge made us understand this project and its manifestations in great depths and helped us to complete the assigned tasks on time.

I am also very grateful to the **M. Vamsi Krishna sir, Department of Biotechnology** for sharing his knowledge and experience with us in this internship as it would be impossible for us to fulfil the project without his support and encouragement.

I would like to extend my sincere thanks to all my faculty advisors andespecially my mentor, **E. A. V. V. Rambabu. M sir, Head of the Department of Life sciences, B V Raju college** for his timely guidance and constant supervision.

It has been great honour and privilege to undergo training at Bio Enviro Chemical Solutions

I would like to express my gratitude towards my parents for their kindcooperation and encouragement which help me in completion of this project.

Signature of student

VASA GOPIKA

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7.	REFERENCE

1. INTRODUCTION

Nanomaterials are the basis of nanoscience and nanotechnology. Over the past few years, the interdisciplinary study and development sector known as nanostructure science and technology has expanded dramatically. Nanomaterials are typically defined as substances that are smaller than 100 nm in at least one dimension. A nanometer is one millionth of a millimetre in size and has a diameter 100,000 times smaller than a human hair. Because of the unique optical, magnetic, electrical, and other properties that arise at this scale, nanomaterials are of significant interest. These newly discovered qualities have the potential to have significant effects on electronics, medicine, the environment, and sanitation as well as on how effectively water is treated. These particles, which display highly controlled physical, chemical, and biological properties at the atomic and subatomic levels, are generally referred to as nanoparticles (NPs). Yet, due to their distinctive properties, they can be used in a variety of fields, including biology, communications, agriculture, electronics, and optoelectronics. (Eatemadi A, 2014)

Classification of nanomaterials

Nanomaterials can be categorised as zero-dimensional (quantum dots), one-dimensional (quantum wires), two-dimensional (thin films), or three-dimensional (nanostructured mater) depending on the dimension in which the size effect on the resultant property becomes apparent (Table 1).

Table 1: Classification of Nanomaterials

S.No.	Dimensions	Size	Examples
1	3-dimensions	< 100 nm	Nanoparticles, quantum dots
2	2-dimensions	< 100 nm	Nanotubes, nanowires, nanofibers
3	1-dimension	< 100 nm	Thin films, coatings
4	0-dimension	< 100 nm	Semiconductor quantum dots (QDs), nanoparticles and colloidal particles

Due to broad and intense agricultural practises, there has been a noticeable rise in the environmental discharge of some dangerous acute natural pollutants in recent years. The chemical equilibrium of organ phosphorus compounds enables them to penetrate deeper into the soil and reach groundwater. (Azizi S. Mohamad R, 2017)

Moreover, they are sufficiently water soluble and biodegradation-resistant. Considering how long they remain in the environment, many pesticides have high levels of toxicity. Thus, it is crucial to remove these chemically persistent, non-biodegradable pesticide pollutants from contaminated water. Due to its potential to address environmental challenges, broadband semiconducting photocatalysis has attracted the interest of many professionals in recent years. Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties(Eatemadi A, 2014) (Pês BS, 2014).

Applications of copper nanoparticles

Cu-NPs have diverse scientific applications. They are very effective against different pathogenic microbes. A high concentration of Cu-NPs generates reactive oxygen species in bacterial cells which eventually cause cell lysis. Moreover, Cu-NPs have exhibited anticancer and antifungal activities. Due to their antimicrobial activity, it is also used for food preservation and agricultural field to draw protection against different pathogenic fungi and bacteria. Copper-based nano fertilizer and nano- insecticides promote growth and nutrients in crop plants. Copper-based bioremediation plays a pivotal role in waste-water treatment and removal of heavy metals from soil. Copper is a good conductor of electricity hence it is used as a super-conductor and has a significant contribution to the modern electronic field. In the following figure, we have summarized the different applications of Cu-NPs and also elaborate its major application in the following context.

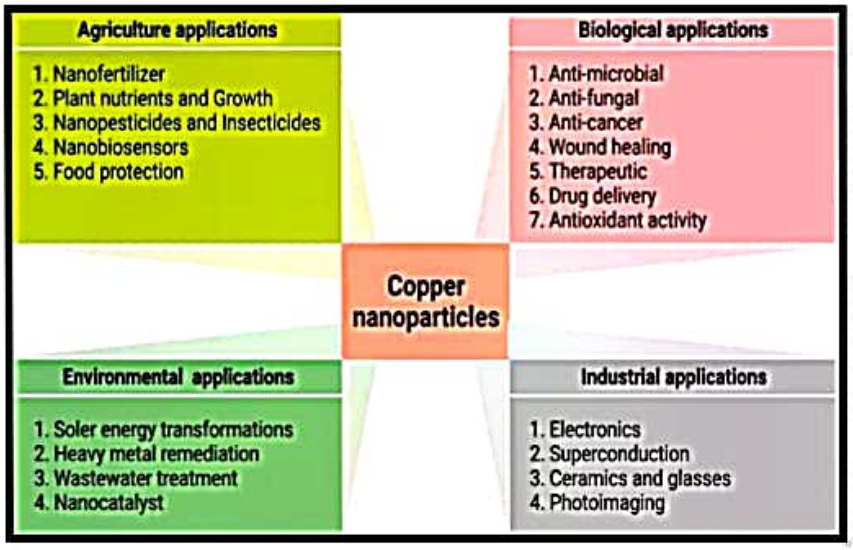


Fig. 2: Applications of copper nanoparticles

2. REVIEW OF LITERATURE

Synthesis of nanoparticles involves a multidisciplinary technology with different fields of science (biology, chemistry and physics) and engineering research. Different methods have different routes for the synthesis of nanoparticles. Number of physical methods has been reported for the synthesis of nanoparticles but each method has some limitations in which primarily the cost of the instrument is a common hurdle. Secondly, larger space and high energy requirement for set-up of all the experimental conditions are a stumbling block.

Chemicals can be used for the effective generation of nanomaterials that are stable in nature. With the development of new chemical methods, the concern for environmental contaminations is also heightened as the chemical procedures involves use of toxic solvents, high energy consumption and large amounts of hazardous byproducts that may create a high risk to the environment and human health. These methods also require capping agents for stabilization of the nanoparticles. Furthermore, the production cost is high and it generates limited shapes of nanoparticles which greatly diminishing their potential properties and applications.

Methods for synthesis:

The top-down approach uses initial macroscopic structures. The methods begin with larger particles which are reduced to nanoparticles after a sequence of operations performed over them. Main shortcomings of these methods are that they involve large installations and hug capital is required for set up. The methods are quite expensive and not suitable for large-scale production. The method is suitable for laboratory experimentation. The approach is based upon the grinding of materials. These methods are not suitable for soft sample. (Pês BS, 2014)

Methods in top-down approach:

1. Physical vapour deposition.
2. Chemical vapour deposition.
3. Ion implantation.
4. Electron beam lithography.
5. X-ray lithography.

Bottom-up approaches of production of nanomaterials comprise the miniaturization of materials constituents to the atomic level with the additional procedure leading to the development of nanostructures. Throughout the further progression, the physical forces working at nanoscale combined simple units into larger stable structures. The methodology is principally based on the principle of molecular recognition (self-assembly). Self-assembly means growing more and more things about one's kind from themselves. Many of these techniques are still under development or are just beginning to be used for the commercial production of nanoparticles

Methods in a bottom-up approach:

1. Sol-gel synthesis
2. Colloidal precipitation
3. Hydrothermal synthesis
4. Organometallic chemical route
5. Electro deposition.

INTRODUCTION TO TULASI

In ethno- botanical literature of India, several hundreds of plants are known to have the potential to treat many diseases. Among them the most popular ones is Tulasi traditionally used for the treatment of diseases. The Tulsi plant is known as "The mother medicine of Nature " and "The Queen of Herbs". For the docking studies, the chosen plant species is Ocimum tenuiflorum, which is also known as Ocimum sanctum. The common name of Ocimum tenuiflorum is "Krishna tulsi"

DISTRIBUTION:

Ocimum tenuiflorum is native to India, Iran and now cultivated in Egypt, France, Hungary, Italy, Morocco, USA. Basil is naturally found wild in the tropical and subtropical regions of the world. Basil thrives in warm and temperate climates. Basil is an aromatic, low growing herb the leaves of which have a bright green to purple ovate colour, and is grown in warm, tropical climate. Basils are native to tropical Asia and are likely to have originated in India. It is an annual plant, usually propagated through seeds. It is widely distributed in tropical areas and can be easily found at an altitude of 1800 meters in Himalayan region (shinde, 2014)

TAXONOMIC STUDY

It is a much-branched small herb and 30 to 75 cm in height. All parts of Tulasi are used in medicine, especially fresh and dried leaves. Leaves are oblong, acute with entire or serrate margin, pubescent on both sides and minutely gland dotted. The leaves are green in color with aromatic flavor and slightly pungent taste. Flowers are purplish in color in the form of racemes. Nutlets are subglobose, slightly compressed, pale brown or red in color. Seeds are reddish black and subglobose. Leaves have petioles and are ovate, up to 5 cm long, usually slightly toothed. The flowers are purplish in elongate racemes in close whorls. The two main morphotypes cultivated in India and Nepal are green-leaved (Sri or Lakshmi tulasi) and purple-leaved (Krishna tulasi) (Kumar, 2018)

BOTANICAL CLASSIFICATION:

Domain: Eukaryota
Kingdom: Plantae
Phylum: Spermatophyta
Sub-phylum: Angiospermae
Class: Dicotyledonae
Order: Lamiales
Family: Lamiaceae
Genus: Ocimum
Species: tenuiflorum

THERAPEUTIC USES:

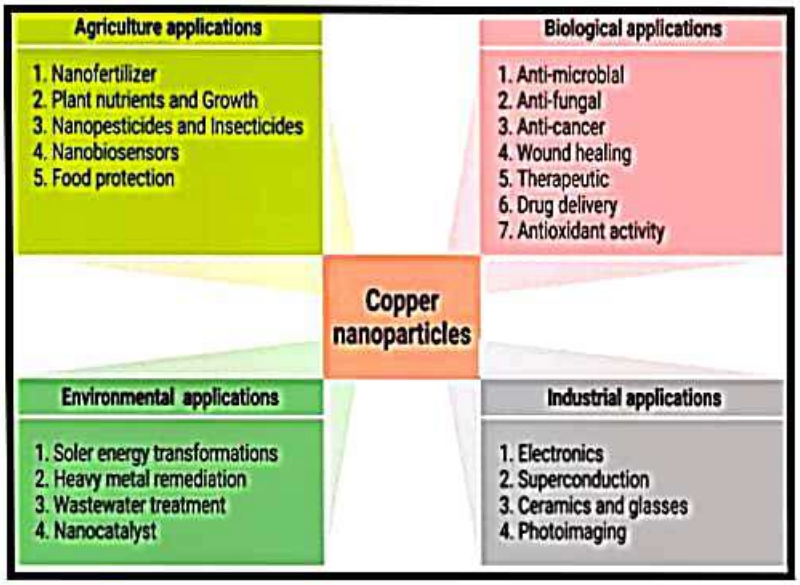
The Holi basil is the most sacred plant and it is mentioned in Charaka Samhita and Susruta Samhita, as every part of plant has its own medicinal properties. This immortal plant is the most sacred plant in Hindu religion, which contains in itself every perfection, cures every ill, and purifies and guides to the heavenly paradise those who worship it. These studies reveal that tulasi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti- oxidant, anti-cataract, anti-inflammatory, chemopreventive, radio protective, hepato protective, neuro-protective, cardio-protective, anti-diabetic, anti- hypercholesterolemia, anti-hypertensive, anti-carcinogenic, analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant, memory enhancement, anti- asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritic, adaptogenic, anti-stress, anti- cataract, anti-leukodermal and anti-coagulant activities (MM, 2014) (Chanthaboury M, 2022)

Green synthesis of CuO NPs using plant extract

Copper Oxide Nanoparticles:

Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties.

Therefore, the development of green synthesis of CuO-NPs is advancing as a key branch of nanotechnology where the use of biological entities like plant extract or plant biomass, microorganisms for the generation of NPs could be an alternative to chemical and physical methods in an eco-friendly way. Hence, this project describes the green-inspired synthesis of CuO-NPs hat can provide advantage over the physical and chemical methods. Novel heterogeneous metal oxide semiconductor materials have recently been developed as a promising alternative to conventional wastewater treatment. These materials have drawn significant attention due to their photocatalytic ability in the degradation of various environmental pollutants such as detergents, pesticides, dyes, and volatile organic compounds under UV light irradiation. In contrast to conventional wastewater treatment, these photocatalysts have the ability to transform contaminants into safe compounds while they are still in the wastewater. With CuO being well-known as a non-toxic UV and photoactive material, the use of photocatalysts in the treatment of water pollution has gained increasing attention. CuO nanoparticle-based composite materials have been thoroughly investigated for their potential to increase CuO efficiency in photocatalysis by metal ion loading, coupling with other metal oxides, and combining with carbonaceous materials. The goal of the current effort is to create zinc oxide nanoparticles utilising a green synthesis method. (Prasad). (Bordbar M) (Bhuyan T. Mishra K. Khanuja M, 2015)



Pharmacological Activities

Antibacterial activity:

The science dealing with the study of the inhibition and treatment of diseases caused by microorganisms is known as medical microbiology. Its sub-disciplines are virology (study of viruses), bacteriology (study of bacteria), mycology (study of fungi), phycology (study of algae) and protozoology (study of protozoa). For the treatment of diseases inhibitory chemicals used to kill bacteria's or inhibit their growth, are called antibacterial agents. The ability of substances to limits or prevent the growth of bacteria's is called antibacterial activity of the material. (Bhuyan T. Mishra K. Khanuja M, 2015)

Antifungal activity:

It is defined as the ability of a substance to limits or inhibits the growth of yeasts and other fungal organisms. Antifungal agents are used to kill or inhibit the further growth of fungi. In medicine, they are employed as a treatment for infections such as athlete's foot, ringworm and thrush and work by exploiting differences between mammalian and fungal cells. They kill off the fungal organism without side effects on the host.

Unlike bacteria, both fungi and humans are eukaryotes. Thus, fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance. Therefore, a greater attention has been paid to antimicrobial activity screening and valuating methods. The antimicrobial activities of nanoparticles have been evaluated using disc diffusion, flow cyto-fluorometric and bioluminescent methods

3. MATERIALS AND METHODS

Materials and Methods

Chemicals

Copper acetate procured from the firm Molychem was used as a precursor for the synthesis of copper nanoparticles and Nutrient Agar Media for the Antibacterial and Antifungal activity.

Glassware and general apparatus

Conical flasks and Beakers, Volumetric flasks, measuring cylinders, Test tubes, Centrifuge tubes, Hot air Oven, Watch Glass and Hotplate.

Chromic acid wash

Follow all normal safety precautions when using concentrated acids and acid solutions. Acids can severely burn the skin. Dispose of all acids properly. A chromic acid wash has hydrolyticand oxidative capabilities for the chemical decomposition of biological molecules. The acid may also dissolve mineral deposits.

To prepare a chromic acid wash, mix 2 g of sodium or potassium dichromate with sufficient distilled water to make a paste of chromate salt. Add 150ml of concentrated sulphuric acid. Increase the proportions to make larger amounts.

Tulasi *(Ocimum sanctum)* leaf extract preparation:

Fresh leaves of Tulasi *(Ocimum sanctum)* were collected. The collected leaves were thoroughly washed several times using deionized distilled water, air-dried and chopped finely into small pieces. Twenty grams of chopped leaves were taken in pestle and mortar. Leaf extract was prepared by weighing 20g of fine powder with 200 ml of double distilled water boiled at 60°C in Erlenmeyer flask for 20 min. The Tulasi *(Ocimum sanctum)* leaf extract was then filtered through Whatman No.1 filter paper. The filtered was used for the synthesis of nanoparticles in room temperature.

Preparation of 100 ml aqueous $CuCH_3COO_2$ (0.1M) solution

Copper Acetate $CuCH_3COO_2$ procured from the firm Molychem was used as a precursor for the synthesis of Copper nanoparticles. 1.81 gms of $CuCH_3COO_2$ was dissolved in 100 ml of deionized water for use in further experiments.

Green Synthesis of copper nanoparticles:

Plants consists of large number of biologically active compounds and hence, most of the plants have proven record for their anthelmintic, antitumor, antimutagenic, antibacterial and fungicidal properties. The synthesis of metallic NPs involves simple mixing of metal solution with extract of plant. Nanoparticles are produced in the medium due to reduction of metal ions. The reaction to give metallic NPs is as shown in Figure.

Many earlier investigations revealed that Cu NPs can be synthesised by the application of most common precursor copper salts namely, cupric acetate (monohydrate) ($(CH_3COO)_2Cu{\cdot}H_2O$) (Copper chloride di-hydrate ($CuCl_2.\ 2H_2O$) and Copper sulfate pentahydrate ($CuSO_4.5H_2O$) Various factors such as concentration, pH, temperature, influence the nature and properties of synthetic Cu NPs as well as CuO NPs.

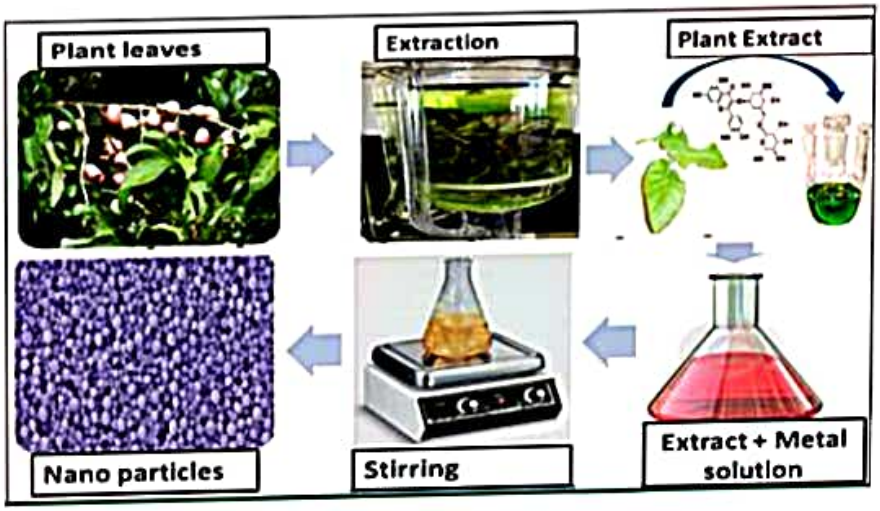


Fig. : Green synthesis of copper nanoparticles.

100 ml of metal solution (stirred for 30mins)

30ml Tulasi *(Ocimum sanctum)* leaf extract added to the metal solution drop wise

Place the beaker on hot plate with continuous stirring

Beaker is covered

Maintaining Temperature at 60°C for 3hrs Continuous Stirring

Brown Colour Precipitate is the formed

Figure : Flow chart for the preparation of CuO Nano Particles

Antimicrobial activity of CuO-NPs

Biogenically synthesized CuO-NPs also have shown antimicrobial activity against wide range of microbes. In this section we have discussed antimicrobial activity of CuO-NPs, Most of the bacteria and pathogenic fungi are harmful for environment, agriculture, and living organisms. The antibacterial character of CuO-NPs against pathogenic fungi and bacteria is due to change in the cell permeability when the plasma membrane of bacterial cell comes in contact with CuO-NPs. This is due to the reason that CuO-NPs move to the cytoplasm and affect the normal functioning of cell resulting in the formation of zone of inhibition against the microbes. Further, CuO-NPs damage the cell membrane which results in the death of bacteria. This can be explained by the mechanism that oxygen species are released on the surface of NPs that react with hydrogen to produce hydrogen peroxide. The generated hydrogen peroxide either stops the growth of bacteria or kills the bacteria.

The bacterial cell membrane disruption takes place by CuO-NPs, due to formation of superoxide and hydroxyl radicals. The zone of inhibition directly proportional to the antibacterial activity of NPs, but inversely proportional to the size of CuO-NPs. Hence, as the size of NPs decreases, higher is the zone of inhibition and greater is the antibacterial action. The formation of hydrogen peroxide is related to the size and surface area of synthesized NPs. Smaller the CuO-NPs and larger the surface zone per unit area, greater is the formation of oxygen species and higher is the formation of hydrogen peroxide. The antibacterial activity has also been found to depend upon the shape of nanoparticles, type of synthesis and concentration of the CuO-NPs

Antifungal activity:

fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release.

Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance.,

Instruments Used:

MAGNETIC STIRRER WITH HOT PLATE:

Magnetic stirrers are widely used in scientific experiments and industrial production. In addition to their excellent stirring performance, they also have the advantage of being easy to use and clean. Stirring is utilized to produce uniform mixes and improve those mixers. A chemical reaction occurs when liquid or liquid-like substances interact with one another. This reaction causes the substances to aggregate. Mixing equipment is used in most vessels that need to be stirred. The way they're designed, as well as the mixing gear, impact how effectively they combine the components. Magnetic stirring is a process you can use to stir liquids in open and closed systems. This process can be performed under pressure or vacuum over a wide temperature range. Additionally, magnetic stirring can be used with any chemical substance.

Uses:

Magnetic stirrers are used to mix fluids rapidly of various viscosities. They're most often seen in laboratories studying biology and chemistry. Magnetic stirrers are utilized in a variety of applications.

Working:

A magnetic stirrer, often known as a Magnetic mixer, is a machine that mixes ingredients by attracting like charges and repulsing dissimilar ones. A magnetic stirrer uses a rotating magnetic field to stir a non-magnetic liquid in a container. The rotating field is created by a magnet mounted on the stirrer underneath the container. As the magnet rotates, it creates a rotating magnetic field that extends into the liquid.

WEIGHING BALANCE:

A weighing balance is a laboratory instrument that is used to measure the mass or weight of an object. They are commonly used in analytical and research laboratories, as well as in the pharmaceutical and chemical industries, where precise measurements are critical. Weighing balances are also used in commercial settings such as in food processing, jewellery making, and shipping.

A typical weighing balance consists of a platform or pan on which the object being measured is placed, and a beam or sensor that detects the weight of the object. The beam or sensor is connected to a display unit that shows the weight in the desired units, such as grams, milligrams, or ounces.

There are three main types of weighing balances:

- Mechanical balances: measure weight using physical components such as levers and counterweights.
- Analytical balances: These are highly accurate and sensitive balances that can measure weight to within a few thousandths of a gram.
- Digital balances: These balances use electronic sensors to measure weight and digitally display results.

Weighing Balance principle: The principle behind weighing balances is based on the concept of balance of weight. This means that the weight of an object is balanced against a known weight, such as a set of calibrated weights until equilibrium is reached. The balance then displays the weight of the object being measured. In conclusion, weighing balances are essential tools in laboratory and industrial settings where accurate and precise measurements are critical. They come in different types and models, each with its own unique features and capabilities

HOT AIR OVEN:

A hot air oven is a type of dry heat sterilization. Dry heat sterilization is used on equipment that cannot be wet and on material that will not melt, catch fire, or change form when exposed to high temperatures. Moist heat sterilization uses water to boil items or steam them to sterilize and doesn't take as long as dry heat sterilization. Examples of items that aren't sterilized in a hot air oven are surgical dressings, rubber items, or plastic material.

Items that are sterilized in a hot air oven include:

- Glassware (like petri dishes, flasks, pipettes, and test tubes)
- Powders (like starch, zinc oxide, and sulfadiazine)
- Materials that contain oils
- Metal equipment (like scalpels, scissors, and blades)

Principle: Hot air ovens use extremely high temperatures over several hours to destroy microorganisms and bacterial spores. The ovens use conduction to sterilize items by heating the outside surfaces of the item, which then absorbs the heat and moves it towards the centre of the item.

The commonly-used temperatures and time that hot air ovens need to sterilize materials is 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.

AUTOCLAVE:

An autoclave is a moist heat sterilizer as the Moist heat sterilization uses water to boil items or steam them to sterilize with specified pressure. Most of the growth mediums and pipette tips and other biological medias are generally preferred for moist heat sterilization.

Principle: Autoclave works under the principle of Moist Heat Sterilization as it uses high pressure and high temperature for longer periods to sterilize the biological medias and other compounds inorder to kill the bacteria and other microorganisms. Generally the autoclave is maintained at 121°C at 15lbs pressure for 1 Hour

Incubator:

Principle: It depends on the principle of thermoelectricity. The incubator has a thermostat which maintains a constant temperature by creating a thermal gradient. For most the organisms 37°C is the favourable temperature while yeast organisms require 30°C.

LAMINAR AIR FLOW CHAMBER:

Principle: It is an enclosed workstation that is used to create a contamination free work environment through filters to capture all the particles entering the cabinet. These are the most useful for the aseptic cabinets the effluent air is drawn into the face of the user.

In a biosafety cabinet, both the sample and user are protected while in the laminar flow cabinet, only the sample is protected and not the user. Laminar flow cabinets are similar to bio safety cabinets with the only difference being that in laminar flow cabinets the effluent air is drawn into the face of the user.

Micropipette:

A micropipette is acommonyetan essential laboratory instrument used to accurately and precisely transfer volumes of liquid in the microliter range. Micropipettes are available in single channel and multi-channel variants.

- All the other chemicals are procured from Qualizens limited.
- For all the assays the Millipore degraded distilled water has been used.

Characterization of CuO nanoparticles:

FTIR analysis

The chemical composition of the synthesized magnesium nanoparticles was studied by using FTIR spectrometer (Perkin-Elmer LS-55- Luminescence spectrometer). The solutions were dried at 750°C and the dried powders were characterized in the range 4000–400 cm -1 using KBr pellet method

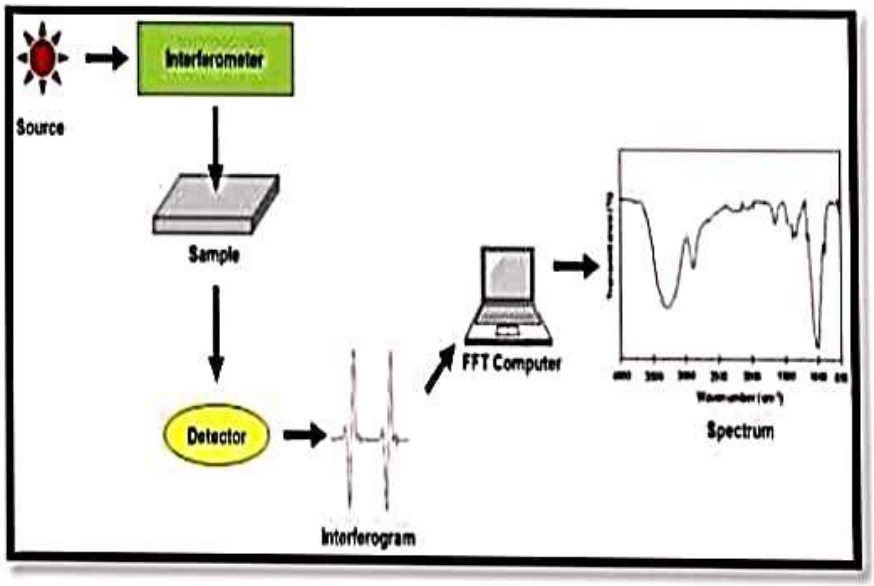


Fig. : FTIR Instrumentation analysis

XRD Analysis

The phase variety and grain size of synthesized silver nanoparticles was determined by X-ray diffraction spectroscopy (Philips PAN analytical). The synthesized silver nanoparticles were studies with CUKα radiation at voltage of 30 kV and current of 20 MA with scan rate of 0.030 /s. Different phases present in the synthesized samples were determined by X′ pert high score software with search and match facility. The particle size of the prepared samples was determined by using Scherrer's equation as follows

$$D \approx 0.9\lambda / \beta \cos 0$$

Where D is the crystal size, λ is the wavelength of X-ray, Θ is the Braggs angle in radians and B is the full width at half maximum of the peak in radians

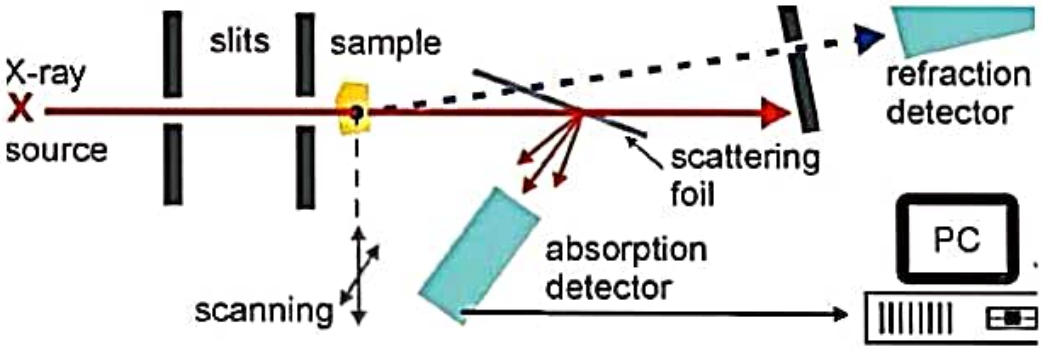


Fig. 6: XRD Instrumentation analysis

SEM (Scanning Electron Microscope)

Scanning electron microscopy (SEM) analysis was carried out using Carl Zeiss Japan, Inodel machine. Thin film of nanoparticle powder sample was prepared on carbon coated tape by adhering small amount of dried fine powder of sample on the grid, excess sample was removed with the help of blotting paper. The film on the SEM grid was allowed to dry by putting it under a mercury lamp for 5 min. The SEM analysis was used to determine the surface structure of biologically synthesized CuO Nanoparticles.

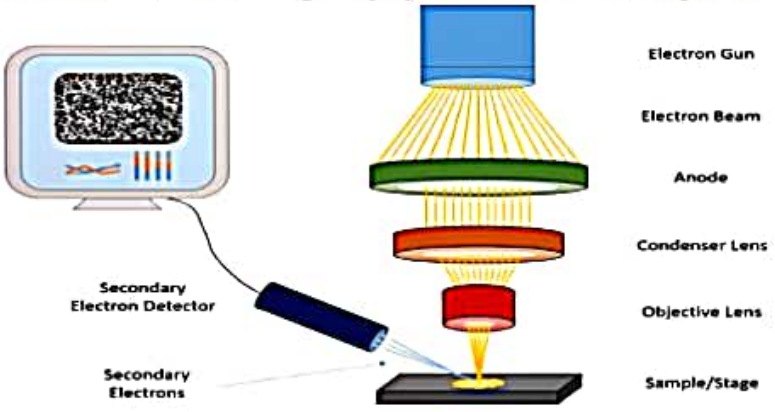


Fig.4: SEM Analysis depict

4. RESULTS AND DISCUSSION

Green Synthesis of Copper Oxide Nanoparticles using Tulasi *(Ocimum sanctum):*

Copper Oxide nanoparticles were synthesized successfully by the green synthesis method using Tulasi *(Ocimum sanctum)* leaf extracts. During exposure to leaf extracts, reduction of copper ions into copper nanoparticles was observed as a result of the colour change from pale Brown colour to biscuit colour. In this method the aqueous leaf extract acts as a solvent with manifold roles as promoter, stabilizer and template for the synthesis of nanoparticles.

Characterization of CuO nanoparticles: Copper oxide nanoparticles obtained were preserved in plastic vials for further characterization. Characterization studies needed to study the exact size, shape and other properties of CuO nanoparticles. In this work I have used XRD and FTIR and SEM analysis to study the CuO nanoparticles.

FT-IR analysis:

To identify the key factors for the copper ion (Cu+) reduction into copper nanoparticles (Cu-NPs), FTIR spectroscopy analyses were carried out. FT-IR analyses show the shifts in the absorbance peak of copper nanoparticles with different points ranging from 561 to 3390cm^{-1} as shown in (Fig. 7). It is evident that there is presence of functional groups such as alkaloids, phenols,halo compounds, and primary and secondary amines in the extract. The IR spectrum of the biosynthesized Cu-NPs showed the peak value at 561,600,679, 1360, 1644, and 3390cm^{-1}. The peak value 561 cm^{-1} relates to the Cu-O bond in the CuO nanostructure group. A peak at 600$cm^{-1}$and 679cm^{-1} relates to the C-I stretch and C-Cl bond in halo compound group. The peak at 1350cm^{-1} was assigned to be C-H bend in the methane group, 1644cm^{-1} relates to the C-C stretch in the aromatic group and peak at 3390cm^{-1} O-H stretch in the primary and secondary amide group. The peaks corresponding to O–H, C=O, C–N, C–H, C=C are the prominent peaks associated with CuO-NPs. Several scientific findings had ascribed the absorption at 3000–3350 cm^{-1} to N–H of amine or O–H of alcohol/phenol. Absorption peaks in the range of 820–880 cm^{-1} have been attributed to aromatic C–H bending. A strong absorption peak at wavelength 2900-3000cm^{-1} was credited to C–H. The absorption band observed at wavelength 1600–700 is traceable to CuO. The absorption band at 1600–1790 are linked to –C=O of carbonyl.

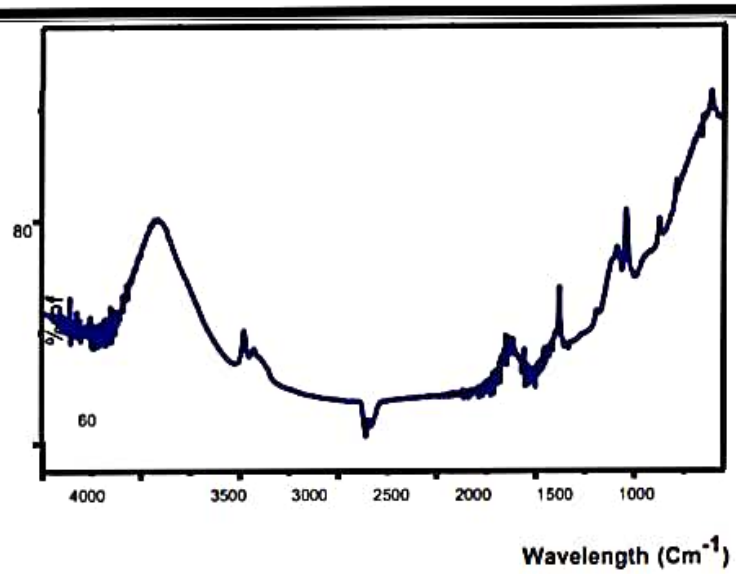


Fig. 7: FTIR analysis of Cu-NPs

XRD Analysis:

XRD technique which is used for the phase determination of crystal structures of the nanoparticles. The XRD analysis of the synthesised particles show characteristic diffraction peaks at 2θ of 32.37, 35.19, 38.49, 48.14, 58.01, 61.31, 66.01, 67.66, 72.37 and 75.19, which were assigned to (110), (11-1), (111), (20-2), (202), (113), (022), (220), (31-2) and (004) planes respectively. From the analysis by XRD, the monoclinic structure of CuO NPs prepared from Azadirachta indica leaf extract was suggested. The monoclinic structure of CuO, so obtained, is then confirmed by comparison with the data provided in MATCH! Software [card no. 96-901-5925] and the cell parameter of the synthesised particle is 4.6832 A°. All the diffraction peaks corresponds to typical monoclinic structure and no other phase was observed. The average crystallite size of CuO nanoparticles was calculated using the Scherrer formula, $D=0.9\lambda/\beta\cos\theta$, where λ is the wavelength of X-ray radiation, β is the full width at half maximum (FWHM) of the peaks at the diffracting angle θ. It was found to be 25 nm indicating its crystalline nature.

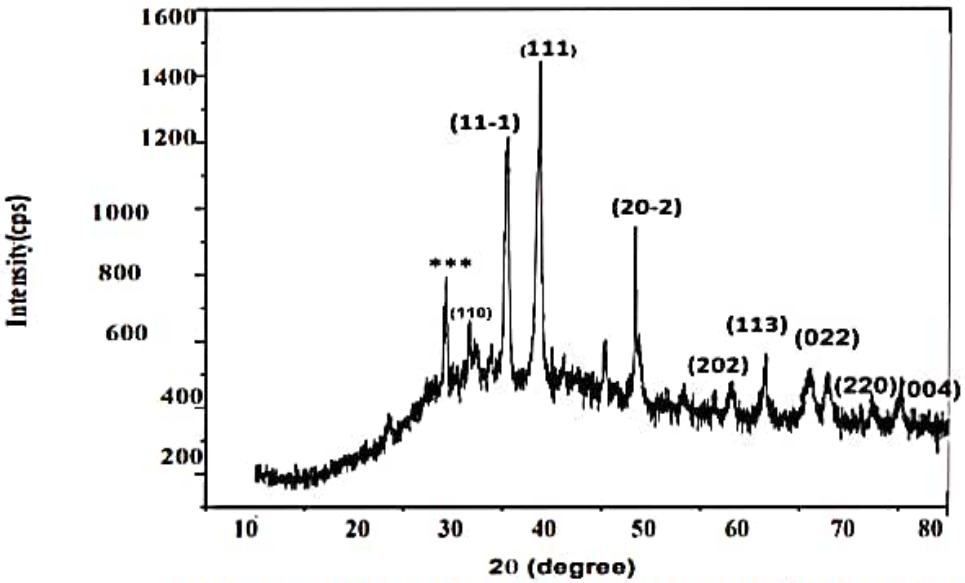


Fig. 8. X-ray diffraction of synthesized CuO NPsSEM analysis:

The technique of scanning electron microscopy is used to visually examine a surface in order to identify contaminants or unidentified particles. For morphological data and particle characterization, SEM analysis is used. The SEM pictures were seen at various magnification settings between 2 nm and 200 nm. The produced nanoparticles were spherical in form and ranged in diameter from 33.6 to 120 nm on average. The biosynthesized CuO NPs produced by Lippia adoensis were reported to have a spherical shape and nanorod shaped structures by (Vinay et al., 2018) using SEM and TEM. According to investigation of P. niruri leaf extract revealed a colour change from pale white to brown and a cylindrical morphology with an average size of 5 nm (Demissie et al., 2020). SEM pictures of produced copper oxide nanoparticles that were aggregated and had particle sizes between 100 and 200 nm (Tahseen Ali Ibrahim et al., 2021).

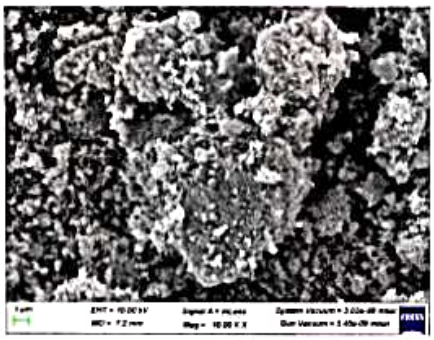


Fig: SEM Image of CuO-NPs

Antimicrobial activity of CuO-NPs:

The antimicrobial property of CuO-NPs towards Gram-positive and Gram-negative bacteria and fungi was tested using the agar well diffusion method. CuO-NPs produced using the green method had strong antibacterial activity against all microbes at concentrations of 800, 500 µg/ml, demonstrating that the dose depends on the mechanism. When the concentration of CuO-NPs against test pathogens increased, so did their antibacterial activity. CuO-NPs had the highest antibacterial activity of 25mm against Escherchia coli at a concentration of 800 µg/mL. It was decided to investigate the antibacterial activity using the well-diffusion method. The strong interaction between silver and the thiol groups found in essential bacterial respiratory enzymes may be the cause of the inhibitory effect of silver compounds. (Dinesh et al., 2022)

S.NO	Test organisms	Zone of inhibition(mm)			
		CuO-NPs (µg/mL)			
		800	600	400	Positive control (Chloramphenicol) 100 µg/mL
1.	*Escherichia coli*	33	28	30	35
2.	*Streptococcus aureus*	30	26	24	27
3.	*Candida*	28	24	30	25

Fig.13: Antibacterial activity of CuO-NPs against *Streptococcus aureus (b) and Escherichia coli(a)*

Fig.14: Antifungal activity of CuO-NPs against Candida

Anti-oxidant activity of CuO-NPs:

Different volumes (2 - 20µl) of CuO-NPs were made up to 40µl with DMSO and 2.96ml DPPH (0.1mM) solution was added. The reaction mixture was incubated in dark condition at room temperature for 20 min. After 20 min, the absorbance of the mixture was read at 517 nm. 3ml of DPPH was taken as control. The % radical scavenging activity of the plant extracts was calculated using the following formula

$$\%RSA = \frac{\text{Abs control} - \text{Abs sample}}{\text{Abs control}} \times 100$$

Where, RSA is the Radical Scavenging Activity; Abs control is the absorbance of DPPH radical + ethanol; Abs sample is the absorbance of DPPH radical + CuO NPs.

Result:

S.NO	DPPH	CuO NPs Solution	Incubation time	OD Values (517nm)
CONTROL	3ml	0	30 minutes	0.72
			1 hour	0.72
SAMPLE	2.96ml	0.06ml	30 minutes	0.66
			1 hour	0.55

Incubation in dark place

5. Conclusions and Recommendations:

Nanotechnology finds extensive applications in nanomedicine, an emerging new field. Nanoparticles can be synthesised by chemical and physical methods but these methods are quite expensive and toxic Use of biological organisms, plant extracts could be an alternative method for production of nanoparticles. The present study reports a green, eco-friendly and cost-effective approach for the synthesis of zinc oxide nanoparticles, using the Tulasi (*Ocimum sanctum*) leaf extract, which acts as a reducing and stabilizing agent . We have also studied the characterization of CuO nanoparticles. FTIR results proved that bioactive compounds responsible for copper bio reduction could be proteins and flavonoids presumed to act as reducing and capping agents for the copper nanoparticles preventing the agglomeration of the particles and thereby stabilizing the nanoparticles. The synthesized nanoparticles are then characterized by using (X-ray diffraction) XRD technique and it is found that the size of particles is about 31 nm. Also, the synthesized nanoparticles exhibit crystalline nature. This method offers a biological technique to synthesize CuO nanoparticles in controlled and precise manner with well-defined diverse sizes and shapes. This study also suggests that green synthesized method can be used as an alternative to the existing chemical and physical methods. More research is needed to shed light on deducing additional details and discerning a more accurate interpretation of the results obtained.

In conclusion green synthesis of CuO-NPs is much more safer and environment friendly than physical and chemical methods. CuO-NP's find application as antimicrobial agent and photocatalyst. The plant based CuO-NPs can become a major field of research and can be used extensively in the food, pharmaceuticals and cosmetic industries. The potential applications of CuO-NPs as antimicrobial agent as well as antifungal agent.

IMAGES









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AN INTERNSHIP REPORT ON

"Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

VARI GUNA SHEKAR

III B.Sc. C.BC.BT

Regd.no 213117121295

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

Bio-Enviro Chemical Solutions

Submitted to

VISHNU
UNIVERSAL LEARNING

DEPARTMENT OF LIFESCIENCES

B.V. RAJU COLLEGE

BHIMAVARAM-534202

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antibacterial and Antifungal activity of Guava (Psidium guajava) based Aluminium oxide nanoparticles" is a bonafide work done by **VARI GUNA SHEKAR** with Reg. Number 213117121295 submitted in partial fulfilment of the work for the Degree of Bachelor Science (C.BC.BT) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT
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B.V Raju College
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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director
DIRECTOR
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Date: 27-05-24
Place: Visakhapatnam

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Tulasi (Ocimum Sanctum) based Copper oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

VASA.DURGA NAGA SAI

III B.Sc. BT.BC.C

Regd.no 213117121296

Under the supervision of

Dr. B. Satish Mohan,
Director,
BECS.

At

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(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

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B.V. RAJU COLLEGE

BHIMAVARAM-534202

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

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This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Tulasi (Ocimum Sanctum) based Copper oxide nanoparticles" is a bonafide work done by **VASA.DURGA NAGA SAI** with Reg. Number 213117121296 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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Visakhapatnam-530017, India

Date: 27-05-24
Place: Visakhapatnam

An internship Project On

"REGULATORY ASPECTS OF BIOTECHNOLOGY & PHARMACEUTICAL DERIVED PRODUCTS & ITS APPLICATIONS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

V. D. L. S. Harsha

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Under the guidance of

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MYLAN LABORATORIES LIMITED

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A Vlatris Company

May 17, 2024

CERTIFICATE

This is to certify that **MS. VAMISETTI. D. L. S. HARSHA,** pursuing final year **B.5c(BTBCC)** with REGD.NO **213117121294** from **B.V Raju College, Bhimavaram,** has undergone the internship training at **MYLAN LABORATORIES LIMITED** from **"13" March 2024 to 12"MAY 2024.**

Ms.Riya Florence has successfully completed a project titled **"Regulatory aspects of Biotechnology & Pharmaceuticals derived products and its application"**, under the guidance of **Mr Masihuddin Md, Asst. General Manager (FDF RA).**

She has maintained the requisite standards that were expected.

We wish her the best of luck in her future endeavors.

Regards,

Dr. N. Malllkharjun Rao
Head of HR - API & OSD Ops India

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This is to certify that this Internship project work is entitled "REGULATORY ASPECTS OF BIOTECHNOLOGY & PHARMACEUTICAL DERIVED PRODUCTS AND ITS APPLICATION" is a bonafide work done by V. D. L. S. Harsha With Reg. Number 213117121294 submitted in partial fulfilment of the work for the **Degree of Bachelor Science (BTBCC)** in B. V. Raju College, **Vishnupur, Bhimavaram** during the academic year **2021-2024**.

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B.V Raju College

Bhimavaram

EXAMINERS:

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

BACHELOR OF SCIENCE [B.Sc.]

Submitted By

TIRUMANI DIVYA SREE

Reg.No : 213117121293

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Under the guidance of:

S.N.PRASAD (PROPRITER)

SURESH(MLT)

DILEEP(MLT)

SRI BALAJI CLINICAL LAB

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VISHNUPUR, BHIMAVARAM

SRI BALAJI CLINICAL LABORATORY

TO WHOMESOEVER IT MAY CONCERN

This is to certify that *ms.Tirumani Divya Sree*, Reg No:213117121293, B.Sc-Biotechnology,Biochemistry,Chemistry - B.V.Raju college -Vishnupur-Bhimavaram, A.P-534202, has undergone industrial training in CLINICAL PATHOLOGY in our laboratory from 01-march-2024 to 01-may-2024

With Best Wishes,

For Sri Balaji Clinical laboratory.

lab incharge

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This is to certify that this Internship project work is entitled "BIOCHEMISTRY ANALYSIS" is a Bonafide work done by T.DIVYA SREE With Reg. number 213117121293 submitted in partial fulfillment of the work for the Degree of Bachelor Science (C.BT.BC) in B.V. Raju college, Vishnupur, Bhimavaram during the academic year 2021-2024.

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EXAMINERS:

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INTERNAL:

AntibacterialandAntifungalactivityof Mango(*Mangiferaindica*)based Copper oxide nanoparticles

Aninternshipreportsubmittedinaccordancewiththerequirementfor thedegree of B.Sc.

Submittedby

TADICHARLA SAI SRI

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This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based Copper oxide nanoparticles** is a bonafide work done by **T.SAi SRI** with Reg. Number **213117121292** submitted in partial fulfilment of the work for the Degree of Bachelor Science (**IC.btbc**) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. TADICHARLA SAI SRI, Regd. No. 213117121292 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF MANGIFERA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

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Place: Visakhapatnam

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

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TO WHOMESOEVER IT MAY CONCERN

This is to certify that *ms.Siddamsetti.L.D.S.Keerthana,* Reg No:213117121291- B.Sc-Biotechnology,Biochemistry,Chemistry - B.V.Raju college -Vishnupur-Bhimavaram, A.P-534202, has undergone industrial training in CLINICAL PATHOLOGY in our laboratory from 01-march-2024 to 01-may-2024

With Best Wishes,

For Sri Balaji Clinical laboratory.

lab incharge

533223

SRI BALAJI CLINICAL LABORATORY

TR NO:46\KNS\2022-23

MAIN ROAD;KOTHAPETA- 533223

AN INTERNSHIP PROJECT ON

R&D DEPARTMENT

"R&D PROCESS AND SEARCH AND DEVELOPMENT"

BACHELOR OF SCIENCE [B.SC.]

SUBMITTED BY

Sidagam pujitha

REG.NO:213117121290

BT BC C

UNDER THE GUIDANCE OF

DR.K.NAVEEN KUMAR REDDY M.SC,PH.D

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R&D Department & Program Coordinator at pashmylaram
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PASHMYLARAM PATANCHERUVU-HYDERABAD

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Date: 17.05.2024

CERTIFICATE

This is to certify that **Ms. S Pujitha (Roll No: 213117121290)** pursuing B. Sc, BTBCC in B.V. Raju College (Adikavi Nannaya University), Bhimavaram has carried out her Internship In **"Geno Toxic Impurities** in R&D department at R&D Center, MSN Laboratories Pvt. Ltd., Hyderabad from **22.02.2024 to 17.05.2024**

During her tenure, she is found to be sincere, hardworking and punctual in her Industrial training.

We wish him every success in his future endeavors.

Yours Sincerely,

For MSN Laboratories Pvt. Ltd.
R&D Center

MSN Laboratories Pvt. Ltd. (R&D Center) ★ Pashamylaram ★

K Rajesh Kumar
Manager HR

VISHNU
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DEPARTMENT OF LIFE SCIENCES

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This is to certify that this Internship project work is entitled **impurities in** "R&D DEPARTMENT OF OUR RESEARCH AND DEVELOPMENT,REPRESENT THE ACTIVITIES COMPANIES UNDERTAKE TO INNAVATE AND INTRODUCE THE NE PRODUCTS AND SERVICES OR TO IMPROVE THEIR EXISTING OFFERINGS" work done by **pujitha sidagam** With Reg. number 213117121290 submitted in partial fulfillment of the work for the Degree of Bachelor Science (BTBCC) in B.V.R college,vishnupur, Bhimavaram during the academic year 2021-2024.

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EXTERNAL:

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An internship Project On

" Isolation and identification of bacteria from food vendors and vegetables "

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

SAMINENI DEVI DEEPTHI

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Under the guidance of

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Chief scientist & Research director at Adhya biosciences Visakhapatnam

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B. V. RAJU COLLEGE

VISHNU
UNIVERSAL LEARNING

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **"Isolation and identification of bacteria from food vendors and vegetables"** is a bonafide work done by **SAMINENI DEVI DEEPTHI** With **Reg. Number 213117121289** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (MB.BT.BC&BTBCC)** in **B. V. Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

INTERNAL GUIDE

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B.V Raju College

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This is to certify that SAMINENI DEVI DEEPTHI final year student of B.Sc,(BT.BC.C) with REGD NO.213117121289 from the Department of Life Sciences, for the study of integrated program B.V.RAJU COLLEGE BHIMAVARAM. She has completed her project in our **"Adhya Biosciences Research Laboratory"** with project work entitled *"ISOLATION AND IDENTIFICATION OF BACTERIA FROM FOOD VENDORS AND VEGETABLES."* from Feb to May 2024. During the period of project work, she has shown keen interest in carrying out the above knowledge in the related work and has acquired work.

We wish her all the best in her future assignments.

P. John Dogulas
15/May/2024

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Adhya Biosciences Pvt Ltd * Visakhapatnam *

Startup India Approval No : DIPP33648
Corporate Identification Number (CIN) : U85191AP2016PTC098209
Registration Number : 98209
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Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

REDDY HARSHITHA DEVI

Roll No. 213117121288

Group: C.BC.BT LIFE SCIENCES

VISHNU
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UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical

Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

BECS

BECS Bio Enviro Chemical Solutions

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CERTIFICATE

This is to certify that Ms. REDDY HARSHITHA DEVI, Regd. No. 213117121288 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF MANGIFERA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 22-05-24
Place: Visakhapatnam

VISHNU B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based copper oxide nanoparticles** is a bonafide work done by **R.Harshithadevi** . with Reg. Number **2131172128 8** submitted in partial fulfilment of the work for the Degree of Bachelor Science) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

HEAD OF THE DEPARTMENT

Head of the Department
Dept. of Life Science
VISHNU B.V. RAJU COLLEGE
Vishnupur, Bhimavaram

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SEMESTER INTERNSHIP

Name of the student: **REDDY HARSHITHA DEVI**

Name of the college: B V RAJU COLLEGE

Registration Number: 213117121288

Period of internship: FEBRAURY TO MAY

Name and address of the intern organization: Bio enviro chemical solutions (BECS), Chinna waltair, Visakhapatnam, Andhra Pradesh-530017.

STUDENT'S DECLARATION

I, **REDDY HARSHITHA DEVI**, student of Bachelor of Science Program,Reg. No.**213117121288** of ..... do hereby declare that I have completed the mandatory internship from ……..to ..... in Bio enviro chemical solutions (BECS) Lab, under the faculty guideship of……., Assistant professor of department of Chemistry, ……college name …….

Signature and Date

CERTIFICATE FROM INTERN ORGANIZATION

This is to certify that **R. HARSHITHA DEVI** Reg. No.**213117121288** of ……underwent internship in Bio enviro chemical solutions (BECS) from …….. to……...

The overall performance of the intern during his/her internship is found to be_____(Satisfactory/Not Satisfactory).

Authorized Signatory with Date and Seal

ACKNOWLEDGMENT

I would like to thank **Dr. B. Satish Mohan sir, Managing Director** of Bio Enviro Chemical Solutions for giving us this wonderful opportunity for the 3 Month Apprenticeship in their institution.

I am highly indebted to …….for her guidance and constant supervision as well as for providing necessary information regarding the project and also for their support in completing the project. Her constant guidance and willingness to share her vast knowledge made us understand this project and its manifestations in great depths and helped us to complete the assigned tasks on time.

I am also very grateful to the……., and also to the ……..in the institution for sharing their knowledge and experience with us in this internship as it would be impossible for us to fulfill the project without their support and encouragement.

It has been great honour and privilege to undergo training at Bio Enviro Chemical Solutions.

I sincerely thank....., for giving me the opportunity to do my internship work in …….

I am grateful to**, ...**for inspiring us with her knowledge and motivation.

I would like to extend my sincere thanks to all my faculty advisors andespecially my mentor, **……..** for her timely guidance and constant supervision.

I would like to express my gratitude towards my parents for their kindcooperation and encouragement which help me in completion of this project.

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1. INTRODUCTION

Nanomaterials are the basis of nanoscience and nanotechnology. Over the past few years, the interdisciplinary study and development sector known as nanostructure science and technology has expanded dramatically. Nanomaterials are typically defined as substances that are smaller than 100 nm in at least one dimension. A nanometer is one millionth of a millimetre in size and has a diameter 100,000 times smaller than a human hair. Because of the unique optical, magnetic, electrical, and other properties that arise at this scale, nanomaterials are of significant interest. These newly discovered qualities have the potential to have significant effects on electronics, medicine, the environment, and sanitation as well as on how effectively water is treated. These particles, which display highly controlled physical, chemical, and biological properties at the atomic and subatomic levels, are generally referred to as nanoparticles (NPs). Yet, due to their distinctive properties, they can be used in a variety of fields, including biology, communications, agriculture, electronics, and optoelectronics. (Eatemadi A, 2014)

Classification of nanomaterials

Nanomaterials can be categorised as zero-dimensional (quantum dots), one-dimensional (quantum wires), two-dimensional (thin films), or three-dimensional (nanostructured mater) depending on the dimension in which the size effect on the resultant property becomes apparent (Table 1).

Table 1: Classification of Nanomaterials

S.No.	Dimensions	Size	Examples
1	3-dimensions	< 100 nm	Nanoparticles, quantum dots
2	2-dimensions	< 100 nm	Nanotubes,nanowires, nanofibers
3	1-dimension	< 100 nm	Thin films, coatings
4	0-dimension	< 100 nm	Semiconductor quantum dots (QDs), nanoparticles and colloidal particles

Due to broad and intense agricultural practises, there has been a noticeable rise in the environmental discharge of some dangerous acute natural pollutants in recent years. The chemical equilibrium of organ phosphorus compounds enables them to penetrate deeper into the soil and reach groundwater. (Azizi S. Mohamad R, 2017)

Moreover, they are sufficiently water soluble and biodegradation-resistant. Considering how long they remain in the environment, many pesticides have high levels of toxicity. Thus, it is crucial to remove these chemically persistent, non-biodegradable pesticide pollutants from contaminated water. Due to its potential to address environmental challenges, broadband semiconducting photocatalysis has attracted the interest of many professionals in recent years.. (Eatemadi A, 2014) (Pês BS, 2014)

Copper Oxide(CuO) is one of the other semiconducting materials that is actively explored because of its special physicochemical, piezoelectric, optical, and catalytic properties. These characteristics are associated with the morphology, size, and shape of CuO nanoparticles. Nanostructures are used in the production of hydrogen, lithium-ion batteries, and bacterial homeostasis. Due to the release of coloured and poisonous effluent into water bodies, dyes, which are widely used in the paper, plastics, textile, and rubber sectors, have severely contaminated the environment. Their toxicity, resistance to natural decomposition, and persistence in the environment have been major sources of worry for societies and regulatory bodies all over the world. The conventional methods for treating dye waste effluents are frequently ineffective, expensive, and non-destructive, or simply shift contamination from one phase of the water cycle to another.

2. REVIEW OF LITERATURE

Synthesis of nanoparticles involves a multidisciplinary technology with different fields of science (biology, chemistry and physics) and engineering research. Different methods have different routes for the synthesis of nanoparticles. Number of physical methods has been reported for the synthesis of nanoparticles but each method has some limitations in which primarily the cost of the instrument is a common hurdle. Secondly, larger space and high energy requirement for set-up of all the experimental conditions are a stumbling block. Chemicals can be used for the effective generation of nanomaterials that are stable in nature. With the development of new chemical methods, the concern for environmental contaminations is also heightened as the chemical procedures involves use of toxic solvents, high energy consumption and large amounts of hazardous byproducts that may create a high risk to the environment and human health. These methods also require capping agents for stabilization of the nanoparticles. Furthermore, the production cost is high and it generates limited shapes of nanoparticles which greatly diminishing their potential properties and applications.

Methods for synthesis:

The top-down approach uses initial macroscopic structures. The methods begin with larger particles which are reduced to nanoparticles after a sequence of operations performed over them. Main shortcomings of these methods are that they involve large installations and hug capital is required for set up. The methods are quite expensive and not suitable for large-scale production. The method is suitable for laboratory experimentation. The approach is based upon the grinding of materials. These methods are not suitable for soft sample. (Pês BS, 2014)

Methods in top-down approach:

1. Physical vapour deposition.
2. Chemical vapour deposition
3. Ion implantation
4. Electron beam lithography
5. X-ray lithography.

Bottom-up approaches of production of nanomaterials comprise the miniaturization of materials constituents to the atomic level with the additional procedure leading to the development of nanostructures. Throughout the further progression, the physical forces working at nanoscale combined simple units into larger stable structures. The methodology is principally based on the principle of molecular recognition (self-assembly). Self-assembly means growing more and more things about one's kind from themselves. Many of these techniques are still under development or are just beginning to be used for the commercial production of nanoparticles

Methods in a bottom-up approach:

1. Sol-gel synthesis
2. Colloidal precipitation
3. Hydrothermal synthesis
4. Organometallic chemical route
5. Electro deposition.

INTRODUCTION TO MANGO

Plant are one of the major groups of living organisms that are an essential entity to the function of the biosphere. Plants can be found in all known parts of the earth in all shapes and sizes. They include the green algae, mosses, ferns, vines, grasses, bushes, herbs, flowering plants and trees although some plants are parasitic, most produce their own food through photosynthesis. Most plants initiate from a seed. The importance of plants in the food chain dates back to ancient times. Plants are one of the two major kingdoms of life forms. They are the only life forms that can produce their own food using energy from sunlight. Plants have green pigment called chlorophyll in their cells, mainly in the leaves. Plants synthesize hundreds of chemical compounds for various functions, including defence against insects, fungi, diseases and herbivorous mammals.

There are many plants are used as a source of drugs by mankind of thousand year. In the Middle Ages, the skills of healing, cultivation of medicinal plants, and preparation of drugs moved to monasteries.

Mangifera indica, commonly known as the mango, is a tropical fruit-bearing tree native to South Asia, specifically the Indian subcontinent. It belongs to the family Anacardiaceae

Description

Tree: Mango trees are large, with a dense, rounded canopy. They can grow up to 35-40 meters (115-130 feet) tall, though they are usually smaller in cultivated orchards.

Leaves: The leaves are simple, evergreen, and arranged alternately. They are lanceolate to oblong and can be up to 30 cm (12 inches) long.

Flowers: The tree produces small, fragrant flowers that are white to yellowish-white. These flowers are borne in large terminal panicles.

Fruit: The mango fruit is a drupe, varying greatly in size, shape, and color. It typically has a fleshy, juicy pulp and a large, flat, fibrous pit. The skin color can range from green to yellow, orange, or red.

DISTRIBUTION

Mangifera indica is native to the Indian subcontinent, specifically India, Bangladesh, and Myanmar. This region is considered the primary center of origin and diversity for the species. The India is the largest producer of mangoes globally, with major growing states including Uttar Pradesh, Andhra Pradesh, Maharashtra, Karnataka, Bihar, Gujarat, and

Tamil Nadu. The country has a vast number of cultivars, adapted to various climatic conditions. And also Mangoes are widely cultivated in countries such as Thailand, the Philippines, Indonesia, and Malaysia. These regions also have a rich diversity of mango varieties. And also it can be used as key agent for development of vaccines and other drug molecules.

CLASSIFICATION OF AZADIRACHTA INDICA

Kingdom: Plantae
Subkingdom: Viridiplantae
Infrakingdom: Streptophyta
Superdivision: Embryophyta
Division: Tracheophyta
Subdivision: Spermatophytina
Class: Magnoliopsida
Superorder: Rosanae
Order: Sapindales
Family: Anacardiaceae
Genus: Mangifera
Species: Mangifera indica

COMPOSITION OF PLANT MATERIALS

Mangifera indica consist of Polyohenols like Mangiferin, Quercetin, Gallic acid, Catechina and Carotenoids like Beta Carotene, Lutein and Zeaxanthin and also Vitamins like Vit-C,E etc., and also in minor quantities they contain triterpenoids like Lupeol and Ursolic acid. And The bioactive compounds in Mangifera indica contribute to various health benefits:

Antioxidant Activity: Protects cells from oxidative damage caused by free radicals.

Anti-inflammatory Effects: Reduces inflammation, which is beneficial in managing conditions like arthritis and other inflammatory diseases.

Anticancer Properties: Certain compounds, like mangiferin and lupeol, have shown potential in inhibiting cancer cell growth.

Antimicrobial Effects: Helps fight against bacterial, viral, and fungal infections.

Antidiabetic Properties: Some compounds can help regulate blood sugar levels.

Cardiovascular Health: Dietary fiber and phytosterols contribute to heart health by maintaining healthy cholesterol levels.

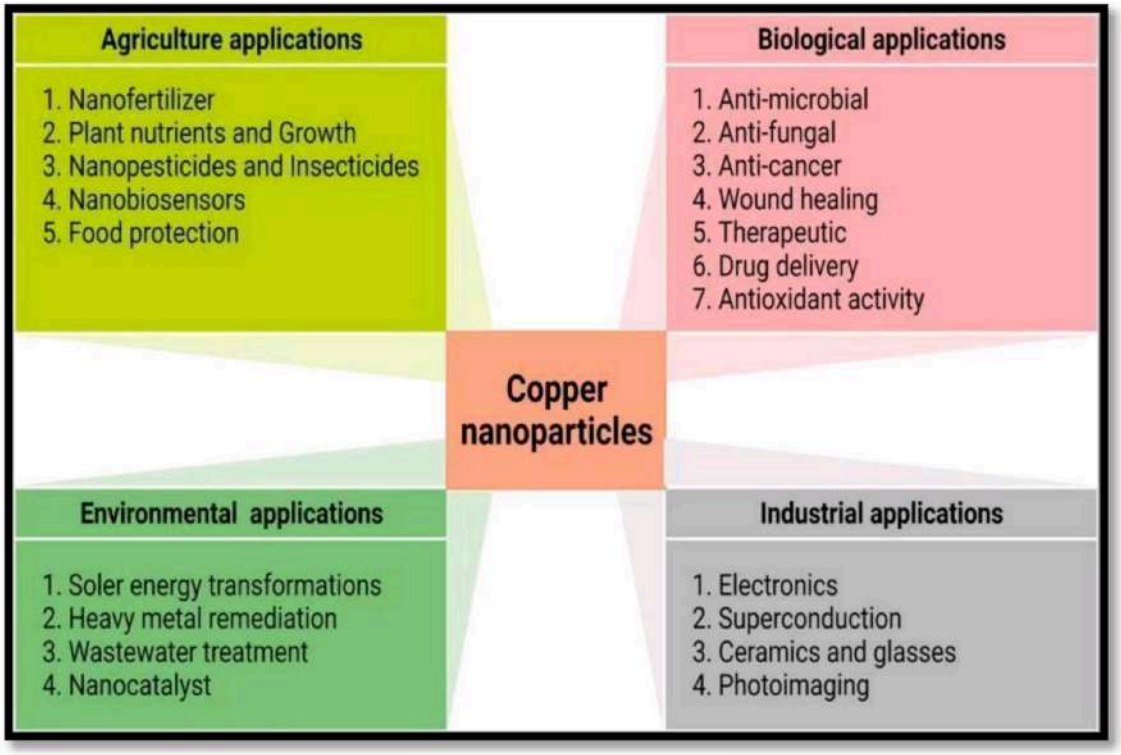
Green synthesis of CuO NPs using plant extract

Copper Oxide Nanoparticles:

Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties.

Therefore, the development of green synthesis of CuO-NPs is advancing as a key branch of nanotechnology where the use of biological entities like plant extract or plant biomass, microorganisms for the generation of NPs could be an alternative to chemical and physical methods in an eco-friendly way. Hence, this project describes the green-inspired synthesis of CuO-NPs hat can provide advantage over the physical and chemical methods. Novel heterogeneous metal oxide semiconductor materials have recently been developed as a promising alternative to conventional wastewater treatment. These materials have drawn significant attention due to their photocatalytic ability in the degradation of various environmental pollutants such as detergents, pesticides, dyes, and volatile organic compounds under UV light irradiation. In contrast to conventional wastewater treatment, these photocatalysts have the ability to transform contaminants into safe compounds while they are still in the wastewater. With CuO being well-known as a non-toxic UV and photoactive material, the use of photocatalysts in the treatment of water pollution has gained increasing

attention. CuO nanoparticle-based composite materials have been thoroughly investigated for their potential to increase CuO efficiency in photocatalysis by metal ion loading, coupling with other metal oxides, and combining with carbonaceous materials. The goal of the current effort is to create zinc oxide nanoparticles utilising a green synthesis method. (Prasad). (Bordbar M) (Bhuyan T. Mishra K. Khanuja M, 2015)



Pharmacological Activities

Antibacterial activity:

The science dealing with the study of the inhibition and treatment of diseases caused by microorganisms is known as medical microbiology. Its sub-disciplines are virology (study of viruses), bacteriology (study of bacteria), mycology (study of fungi), phycology (study of algae) and protozoology (study of protozoa). For the treatment of diseases inhibitory chemicals used to kill bacteria's or inhibit their growth, are called antibacterial agents. The ability of substances to limits or prevent the growth of bacteria's is called antibacterial activity of the material. (Bhuyan T. Mishra K. Khanuja M, 2015)

Antifungal activity:

It is defined as the ability of a substance to limits or inhibits the growth of yeasts and other fungal organisms. Antifungal agents are used to kill or inhibit the further growth of fungi. In medicine, they are employed as a treatment for infections such as athlete's foot, ringworm and thrush and work by exploiting differences between mammalian and fungal cells. They kill off the fungal organism without side effects on the host.

Unlike bacteria, both fungi and humans are eukaryotes. Thus, fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance. Therefore, a greater attention has been paid to antimicrobial activity screening and valuating methods. The antimicrobial activities of nanoparticles have been evaluated using disc diffusion, flow cyto-fluorometric and bioluminescent methods

3. MATERIALS AND METHODS

Materials and Methods

Chemicals

Copper acetate procured from the firm Molychem was used as a precursor for the the synthesis of copper nanoparticles and Nutrient Agar Media for the Antibacterial and Antifungal activity.

Glassware and general apparatus

Conical flasks and Beakers, Volumetric flasks, measuring cylinders, Test tubes, Centrifuge tubes, Hot air Oven, Watch Glass and Hotplate.

Chromic acid wash

Follow all normal safety precautions when using concentrated acids and acid solutions. Acids can severely burn the skin. Dispose of all acids properly. A chromic acid wash has hydrolytic and oxidative capabilities for the chemical decomposition of biological molecules. The acid may also dissolve mineral deposits.

To prepare a chromic acid wash, mix 2 g of sodium or potassium dichromate with sufficient distilled water to make a paste of chromate salt. Add 150ml of concentrated sulphuric acid. Increase the proportions to make larger amounts.

Mango *(Mangifera indica)* leaf extract preparation:

Fresh leaves of Mango *(Mangifera indica)* were collected. The collected leaves were thoroughly washed several times using deionized distilled water, air-dried and chopped finely into small pieces. Twenty grams of chopped leaves were taken in pestle and mortar. Leaf extract was prepared by weighing 20g of fine powder with 200 ml of double distilled water boiled at 60°C in Erlenmeyer flask for 20 min. The Mango *(Mangifera indica)* leaf extract was then filtered through Whatman No.1 filter paper. The filtered was used for the synthesis of nanoparticles in room temperature.

Preparation of 100 ml aqueous $CuCH_3COO_2$ (0.1M) solution

Copper Acetate $CuCH_3COO_2$ procured from the firm Molychem was used as a precursor for the synthesis of Copper nanoparticles. 1.81 gms of $CuCH_3COO_2$ was dissolved in 100 ml of deionized water for use in further experiments.

Green Synthesis of Copper Oxide Nanoparticles using Mango *(Mangifera indica)* plant leaf extract:

In this experiment, the above prepared 100ml of 0.1M solution of Copper Acetate ($CuCH_3COO_2$) was taken in a 250ml glass beaker and stirred it for 30 minutes at room temperature. After that, a solution of 25 ml of Mango *(Mangifera indica)* plant leaf extract was added to the first solution under magnetic stirring. The solution temperature was maintained at 60°C for 4 hours with continuous stirring. The stirred process was complete process in precipitation was recognized by the brown colour colloidal particles at the bottom of the flask.

After the completion of the reaction, it is formed brown coloured precipitate was allowed to settle for one day. The precipitate was separated from this solution by centrifugation at 1000 rpm for 10 minutes and washed with water repeatedly and to remove the impurities then dried in hot air oven 80°C for overnight to yield CuO nanoparticles. The dried sample was grinded and crushed. The synthesis steps demonstrated in Fig.1. The grinded sample was stored at room temperature in airtight container for further characterization.

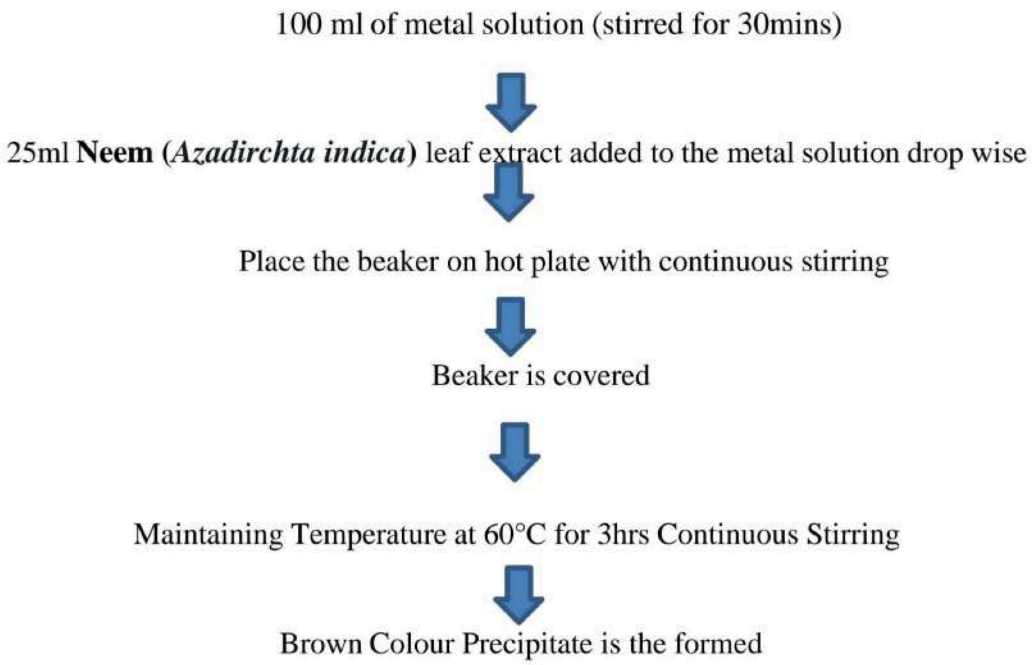


Figure 1: Flow chart for the preparation of CuO Nano Particles

Antimicrobial activity of CuO-NPs

Biogenically synthesized CuO-NPs also have shown antimicrobial activity against wide range of microbes. In this section we have discussed antimicrobial activity of CuO-NPs, Most of the bacteria and pathogenic fungi are harmful for environment, agriculture, and living organisms. The antibacterial character of CuO-NPs against pathogenic fungi and bacteria is due to change in the cell permeability when the plasma membrane of bacterial cell comes in contact with CuO-NPs. This is due to the reason that CuO-NPs move to the cytoplasm and affect the normal functioning of cell resulting in the formation of zone of inhibition against the microbes. Further, CuO-NPs damage the cell membrane which results in the death of bacteria. This can be explained by the mechanism that oxygen species are released on the surface of NPs

that react with hydrogen to produce hydrogen peroxide. The generated hydrogen peroxide either stops the growth of bacteria or kills the bacteria.

The bacterial cell membrane disruption takes place by CuO-NPs, due to formation of superoxide and hydroxyl radicals. The zone of inhibition directly proportional to the antibacterial activity of NPs, but inversely proportional to the size of CuO-NPs. Hence, as the size of NPs decreases, higher is the zone of inhibition and greater is the antibacterial action. The formation of hydrogen peroxide is related to the size and surface area of synthesized NPs. Smaller the CuO-NPs and larger the surface zone per unit area, greater is the formation of oxygen species and higher is the formation of hydrogen peroxide. The antibacterial activity has also been found to depend upon the shape of nanoparticles, type of synthesis and concentration of the CuO-NPs

Antifungal activity:

fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance.,

Antioxidant activity:

An limitation of the oxidation of proteins , lipids , DNA or other molecules that occurs by blocking the propagation stage in oxidative chain reactions .Antioxidants keep reactive oxygen species at low concentration , avoiding oxidative damages while allowing them to play crucial functions in signal transduction.Mangiferin, being a polyphenolic antioxidant and a glucosyl xanthone, it has strong antioxidant, anti lipid peroxidation, immunomodulation, cardiotonic, hypotensive, wound healing, antidegenetive and antidiabetic activities.

Leaves of the mango plant have been studied for their health benefits, which are attributed to a plethora of phytochemicals such as mangiferin, followed by phenolic acids, benzophenones, and other antioxidants such as flavonoids, ascorbic acid, carotenoids, and tocopherols.

Flavonoids are also powerful antioxidant agents. Antioxidants helps your body fight off potentially harmful molecules that can be introduced to the body.The extracts from mango leaves have been studied for their biological activities including anti-cancer, anti-diabetic, anti-oxidant, anti-micronial, anti-obesity, lipid-lowering,hepato-protection,and anti-diarrheal.

Instruments Used:

MAGNETIC STIRRER WITH HOT PLATE:

Magnetic stirrers are widely used in scientific experiments and industrial production. In addition to their excellent stirring performance, they also have the advantage of being easy to use and clean. Stirring is utilized to produce uniform mixes and improve those mixers. A chemical reaction occurs when liquid or liquid-like substances interact with one another. This reaction causes the substances to aggregate. Mixing equipment is used in most vessels that need to be stirred. The way they're designed, as well as the mixing gear, impact how effectively they combine the components. Magnetic stirring is a process you can use to stir liquids in open and closed systems. This process can be performed under pressure or vacuum over a wide temperature range. Additionally, magnetic stirring can be used with any chemical substance.

Uses:

Magnetic stirrers are used to mix fluids rapidly of various viscosities. They're most often seen in laboratories studying biology and chemistry. Magnetic stirrers are utilized in a variety of applications.

Working:

A magnetic stirrer, often known as a Magnetic mixer, is a machine that mixes ingredients by attracting like charges and repulsing dissimilar ones. A magnetic stirrer uses a rotating magnetic field to stir a non-magnetic liquid in a container. The rotating field is created by a magnet mounted on the stirrer underneath the container. As the magnet rotates, it creates a rotating magnetic field that extends into the liquid.

WEIGHING BALANCE:

A weighing balance is a laboratory instrument that is used to measure the mass or weight of an object. They are commonly used in analytical and research laboratories, as well as in the pharmaceutical and chemical industries, where precise measurements are critical. Weighing balances are also used in commercial settings such as in food processing, jewellery making, and shipping.

A typical weighing balance consists of a platform or pan on which the object being measured is placed, and a beam or sensor that detects the weight of the object. The beam or sensor is

connected to a display unit that shows the weight in the desired units, such as grams, milligrams, or ounces.

There are three main types of weighing balances:

- Mechanical balances: measure weight using physical components such as levers and counterweights.
- Analytical balances: These are highly accurate and sensitive balances that can measure weight to within a few thousandths of a gram.
- Digital balances: These balances use electronic sensors to measure weight and digitally display results.

Weighing Balance principle: The principle behind weighing balances is based on the concept of balance of weight. This means that the weight of an object is balanced against a known weight, such as a set of calibrated weights until equilibrium is reached. The balance then displays the weight of the object being measured. In conclusion, weighing balances are essential tools in laboratory and industrial settings where accurate and precise measurements are critical. They come in different types and models, each with its own unique features and capabilities

HOT AIR OVEN:

A hot air oven is a type of dry heat sterilization. Dry heat sterilization is used on equipment that cannot be wet and on material that will not melt, catch fire, or change form when exposed to high temperatures. Moist heat sterilization uses water to boil items or steam them to sterilize and doesn't take as long as dry heat sterilization. Examples of items that aren't sterilized in a hot air oven are surgical dressings, rubber items, or plastic material.

Items that are sterilized in a hot air oven include:

- Glassware (like petri dishes, flasks, pipettes, and test tubes)
- Powders (like starch, zinc oxide, and sulfadiazine)
- Materials that contain oils
- Metal equipment (like scalpels, scissors, and blades)

Principle: Hot air ovens use extremely high temperatures over several hours to destroy microorganisms and bacterial spores. The ovens use conduction to sterilize items by heating

the outside surfaces of the item, which then absorbs the heat and moves it towards the centre of the item.

The commonly-used temperatures and time that hot air ovens need to sterilize materials is 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.

AUTOCLAVE:

An autoclave is a moist heat sterilizer as the Moist heat sterilization uses water to boil items or steam them to sterilize with specified pressure. Most of the growth mediums and pipette tips and other biological medias are generally preferred for moist heat sterilization.

Principle: Autoclave works under the principle of Moist Heat Sterilization as it uses high pressure and high temperature for longer periods to sterilize the biological medias and other compounds inorder to kill the bacteria and other microorganisms. Generally the autoclave is maintained at 121°C at 15lbs pressure for 1 Hour

Incubator:

Principle: It depends on the principle of thermoelectricity. The incubator has a thermostat which maintains a constant temperature by creating a thermal gradient. For most the organisms 37°C is the favourable temperature while yeast organisms require 30°C.

LAMINAR AIR FLOW CHAMBER:

Principle: It is an enclosed workstation that is used to create a contamination free work environment through filters to capture all the particles entering the cabinet. These are the most useful for the aseptic cabinets the effluent air is drawn into the face of the user.

In a biosafety cabinet, both the sample and user are protected while in the laminar flow cabinet, only the sample is protected and not the user. Laminar flow cabinets are similar to bio safety cabinets with the only difference being that in laminar flow cabinets the effluent air is drawn into the face of the user.

Micropipette:

A micropipette is a common essential laboratory instrument used to accurately and precisely transfer volumes of liquid in the microliter range. Micropipettes are available in single channel and multi-channel variants.

- All the other chemicals are procured from Qualizens limited.
- For all the assays the Millipore degraded distilled water has been used.

Characterization of ZnO nanoparticles:

FTIR analysis

The chemical composition of the synthesized magnesium nanoparticles was studied by using FTIR spectrometer (Perkin-Elmer LS-55- Luminescence spectrometer). The solutions were dried at 750°C and the dried powders were characterized in the range 4000–400 cm -1 using KBr pellet method

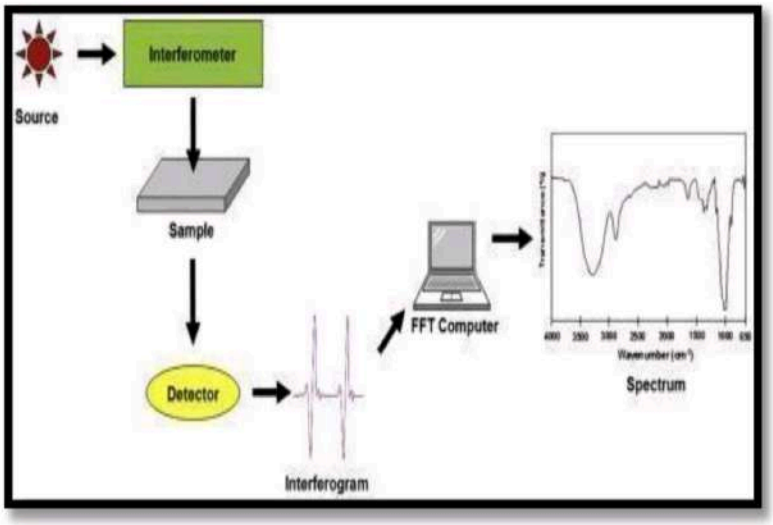


Figure 2: FTIR Instrumentation analysis

XRD Analysis

The phase variety and grain size of synthesized silver nanoparticles was determined by X-ray diffraction spectroscopy (Philips PAN analytical). The synthesized silver nanoparticles were studies with CUKα radiation at voltage of 30 kV and current of 20 MA with scan rate of 0.030 /s. Different phases present in the synthesized samples were determined by X′ pert high score software with search and match facility. The particle size of the prepared samples was determined by using Scherrer′s equation as follows

$$D \approx 0.9\lambda / \beta \cos\theta$$

Where D is the crystal size, λ is the wavelength of X-ray, Θ is the Braggs angle in radians and B is the full width at half maximum of the peak in radians

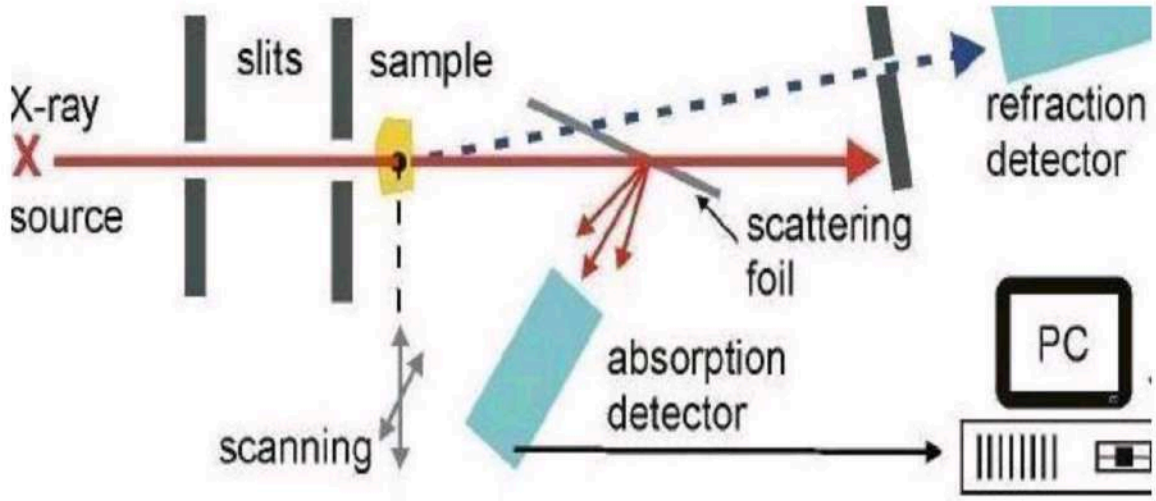


Figure 3: XRD Instrumentation analysis

SEM (Scanning Electron Microscope)

Scanning electron microscopy (SEM) analysis was carried out using Carl Zeiss Japan, Inodel machine. Thin film of nanoparticle powder sample was prepared on carbon coated tape by adhering small amount of dried fine powder of sample on the grid, excess sample was removed with the help of blotting paper. The film on the SEM grid was allowed to dry by putting it under a mercury lamp for 5 min. The SEM analysis was used to determine the surface structure of biologically synthesized CuO-NPs.

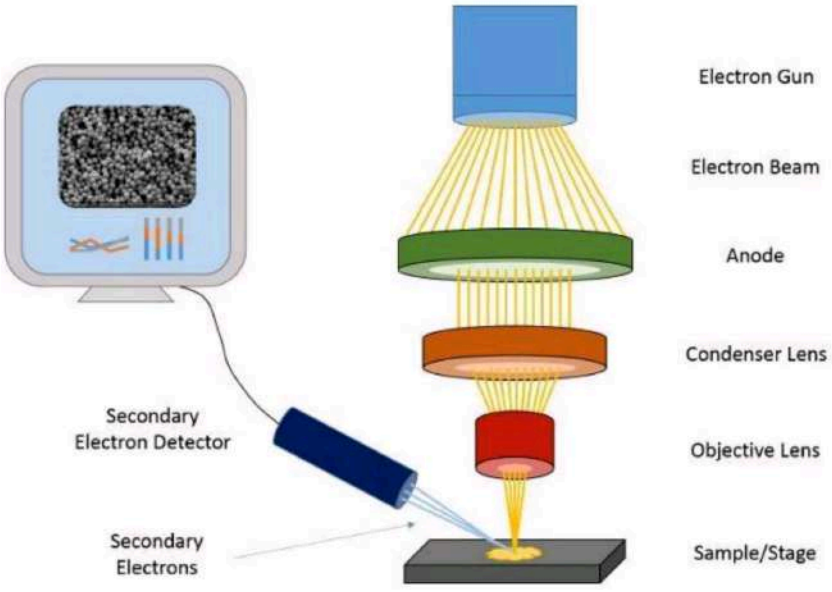


Fig.4: SEM Analysis depict

4.RESULTS AND DISCUSSION

Green Synthesis of Cupper Oxide Nanoparticles using Mango *(Mangifera indica)*:

Cupper Oxide nanoparticles were synthesized successfully by the green synthesis method using Mango *(Mangifera indica)* leaf extracts. During exposure to leaf extracts, reduction of Copper ions into copper nanoparticles was observed as a result of the colour change from pale Brown colour to biscut colour. In this method the aqueous leaf extract acts as a solvent with manifold roles as promoter, stabilizer and template for the synthesis of nanoparticles.

Characterization of CuO nanoparticles: Copper oxide nanoparticles obtained were preserved in plastic vials for further characterization. Characterization studies needed to study the exact size, shape and other properties of CuO nanoparticles. In this work I have used XRD and FTIR and SEM analysis to study the CuO nanoparticles.

FT-IR analysis:

To identify the key factors for the copper ion (Cu+) reduction into copper nanoparticles (Cu-NPs), FTIR spectroscopy analyses were carried out. FT-IR analyses show the shifts in the absorbance peak of copper nanoparticles with different points ranging from 561 to 3390cm^{-1} as shown in (Fig. 7). It is evident that there is presence of functional groups such as alkaloids, phenols,halo compounds, and primary and secondary amines in the extract. The IR spectrum of the biosynthesized Cu-NPs showed the peak value at 561, 600, 679, 1360, 1644, and 3390cm^{-1}. The peak value 561 cm^{-1} relates to the Cu-O bond in the CuO nanostructure group. A peak at 600$cm^{-1}$and 679cm^{-1} relates to the C-I stretch and C-Cl bond in halo compound group. The peak at 1350cm^{-1} was assigned to be C-H bend in the methane group, 1644cm^{-1} relates to

the C-C stretch in the aromatic group and peak at 3390cm^{-1} O-H stretch in the primary and secondary amide group. The peaks corresponding to O–H, C=O, C–N, C–H, C=C are the prominent peaks associated with CuO- NPs. Several scientific findings had ascribed the absorption at 3000–3350 cm^{-1} to N–H of amine or O–H of alcohol/phenol. Absorption peaks in the range of 820–880 cm^{-1} have been attributed to aromatic C–H bending. A strong absorption peak at wavelength 2900-3000cm^{-1} was credited to C–H. The absorption band observed at wavelength 1600–700 is traceable to CuO. The absorption band at 1600–1790 are linked to –C=O of carbonyl.

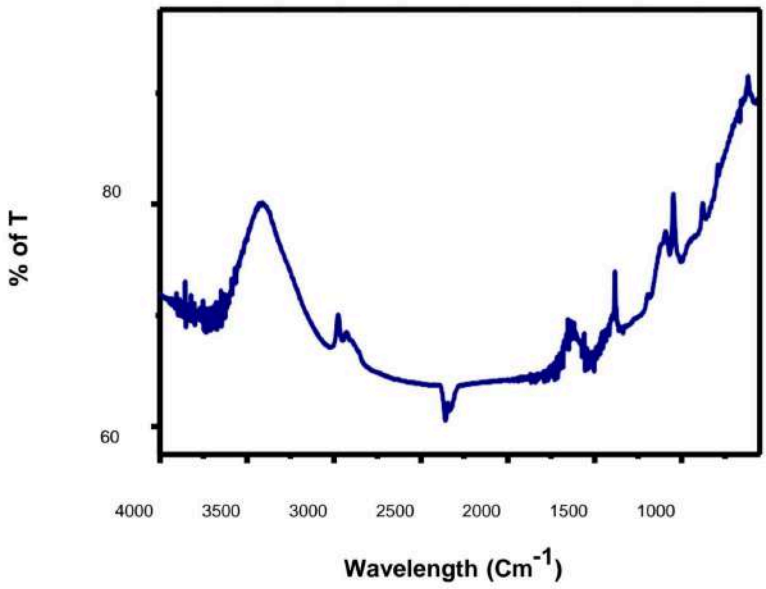


Fig. 7: FTIR analysis of Cu-NPs

XRD Analysis:

XRD technique which is used for the phase determination of crystal structures of the nanoparticles. The XRD analysis of the synthesised particles show characteristic diffraction peaks at 2θ of 32.37, 35.19, 38.49, 48.14, 58.01, 61.31, 66.01, 67.66, 72.37 and 75.19, which were assigned to (110), (11-1), (111), (20-2), (202), (113), (022), (220), (31-2) and (004) planes respectively. From the analysis by XRD, the monoclinic structure of CuO NPs prepared from *Azadirachta indica* leaf extract was suggested. The monoclinic structure of CuO, so obtained, is then confirmed by comparison with the data provided in MATCH! Software [card no. 96-901-5925] and the cell parameter of the synthesised particle is 4.6832 A°. All the diffraction peaks corresponds to typical monoclinic structure and no other phase was observed. The average crystallite size of CuO nanoparticles was calculated using the Scherrer formula, D=0.9 λ/β cosθ, where λ is the wavelength of X-ray radiation, β is the full width at half maximum

(FWHM) of the peaks at the diffracting angle θ. It was found to be 25 nm indicating its crystalline nature.

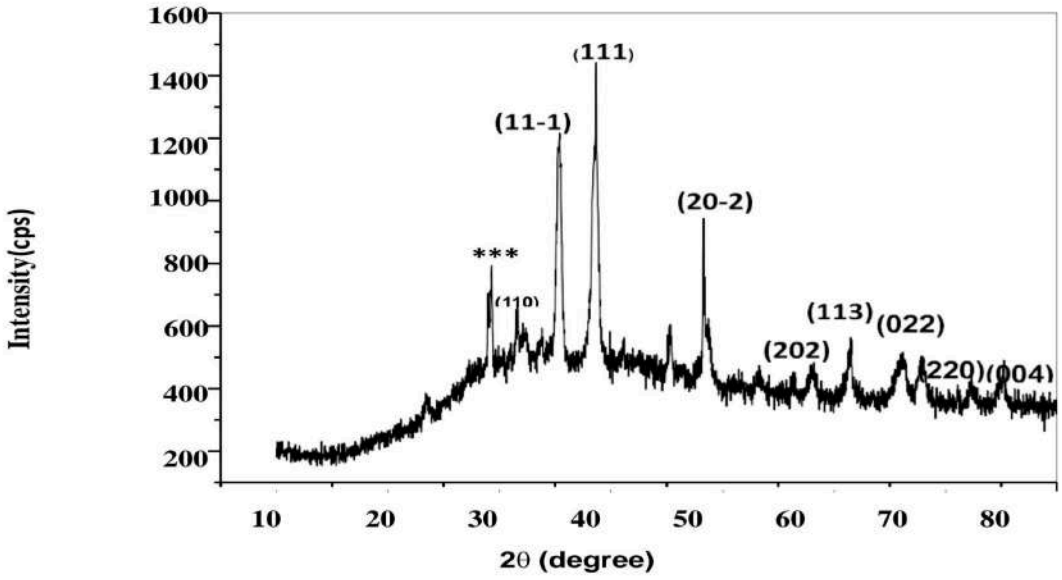


Fig. 8. X-ray diffraction of synthesized CuO NPs

SEM analysis:

The technique of scanning electron microscopy is used to visually examine a surface in order to identify contaminants or unidentified particles. For morphological data and particle characterization, SEM analysis is used. The SEM pictures were seen at various magnification settings between 2 nm and 200 nm. The produced nanoparticles were spherical in form and ranged in diameter from 33.6 to 120 nm on average. The biosynthesized CuO NPs produced by Lippia adoensis were reported to have a spherical shape and nanorodshaped structures by (Vinay et al., 2018) using SEM and TEM. According to investigation of P. niruri leaf extract revealed a colour change from pale white to brown and a cylindrical morphology with an average size of 5 nm (Demissie et al., 2020). SEM pictures of produced copper oxide nanoparticles that were aggregated and had particle sizes between 100 and 200 nm (Tahseen Ali Ibrahim et al., 2021).

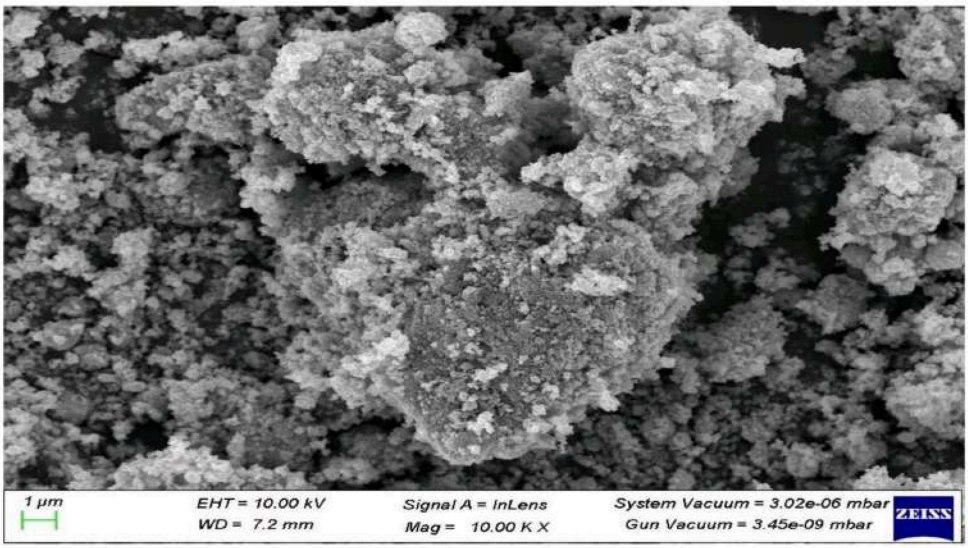


Fig: SEM Image of CuO-NPs

Antimicrobial activity of CuO-NPs:

The antimicrobial property of CuO-NPs towards Gram-positive and Gram-negative bacteria and fungi was tested using the agar well diffusion method. CuO-NPs produced using the green method had strong antibacterial activity against all microbes at concentrations of 800, 600, and 400 µg/ml, demonstrating that the dose depends on the mechanism. When the concentration of CuO-NPs against test pathogens increased, so did their antibacterial activity. CuO-NPs had the highest antibacterial activity of 21mm against *Enterobacter faecalis* at a concentration of 600 µg/mL. It was decided to investigate the antibacterial activity using the well-diffusion method. The strong interaction between silver and the thiol groups found in essential bacterial respiratory enzymes may be the cause of the inhibitory effect of silver compounds.(Dinesh et al., 2022)

S.NO	Test organisms	Zone of inhibition(mm)			
		CuO-NPs (µg/mL)			
		100	50	10	Positive control (Amoxicillin) 100 µg/mL
1	*Enterobacterfaecilus*	22	20	19	23
2.	*E.Coli*	23	15	10	23
3.	*Candida*	10	-	-	15

Fig.13: Antibacterial activity of CuO-NPs against *Enterobacter faecilus and E.Coli*

Fig.14: Antifungal activity of CuO-NPs against Candida

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

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Roll No. 213117121288

Group: C.BC.BT LIFE SCIENCES

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UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical Solutions

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4. Conclusions and Recommendations:

Nanotechnology finds extensive applications in nanomedicine, an emerging new field. Nanoparticles can be synthesised by chemical and physical methods but these methods are quite expensive and toxic Use of biological organisms, plant extracts could be an alternative method for production of nanoparticles. The present study reports a green, eco-friendly and cost-effective approach for the synthesis of zinc oxide nanoparticles, using the Mango*(Mangifera indica)* leaf extract, which acts as a reducing and stabilizing agent . We have also studied the characterization of CuO nanoparticles. FTIR results proved that bioactive compounds responsible for Copper bioreduction could be proteins and flavonoids presumed to act as reducing and capping agents for the Copper nanoparticles preventing the agglomeration of the particles and thereby stabilizing the nanoparticles. The synthesized nanoparticles are then characterized by using (X-ray diffraction) XRD technique and it is found that the size of particles is about 45 nm. Also, the synthesized nanoparticles exhibit crystalline nature. This method offers a biological technique to synthesize CuO nanoparticles in controlled and precise manner with well-defined diverse sizes and shapes. This study also suggests that green synthesized method can be used as an alternative to the existing chemical and physical methods. More research is needed to shed light on deducing additional details and discerning a more accurate interpretation of the results obtained.

In conclusion green synthesis of CuO-NPs is much more safer and environment friendly than physical and chemical methods. CuO-NP's find application as antimicrobial agent and photocatalyst. The plant based CuO-NPs can become a major field of research and can be used extensively in the food, pharmaceuticals and cosmetic industries. The potential applications of CuO-NPs as Antimicrobial agent as well as antifungal agent.

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AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Tulasi (Ocimum Sanctum) based Copper oxide nanoparticles"

An Internship report submitted to the Department of Life sciences, in accordance with APSCHE,

Submitted by

POSINASETTY.SAI PRIYANKA

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Regd.no 213117121286

Under the supervision of

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Director,
BECS.

At

Bio-Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

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DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and antioxidant activity of Tulasi (Ocimum sanctum) based Copper oxide nanoparticles" is a bonafide work done by **POSINASETTY.SAI PRIYANKA** with Reg. Number 3117121286 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT,BC,C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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BECS Bio Enviro Chemical Solutions

An ISO 9001:2015 certified laboratory
NSIC No: NSIC/GP/VSP/2021/91277
Labour licence No. IRE012203014182
APPCB: PCB/ROVSP/BMW/HCE-/2022
Web: https://bioenvirochemical.com

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This is to certify that Ms. POSINASETTI SAI PRIYANKA, Regd.No. 213117121286 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF OCIMUM SANCTUM PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam *

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

R&D DEPARTMENT

"R&D PROCESS AND SEARCH AND DEVELOPMENT"

BACHELOR OF SCIENCE [B.SC.]

SUBMITTED BY

P.VIJAYA BHARATHI

REG.NO:213117121285

BT BC C

UNDER THE GUIDANCE OF

DR.K.MADHUSUNDHAN RAO M.SC,PH.D

DR. A. LAKSHMI M.SC (ORGANIC CHEMISTRY)

R&D Department & Program Coordinator at
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HYDERABAD

PASHMYLARAM PATANCHERUVU-HYDERABAD

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work done by PENUMALA VIJAYA BHARATHI With Reg. number 213117121285submitted in partial fulfillment of the work for the Degree of Bachelor Science (MB BT BC & BTBCC) in B.V.Raju college,vishnupur, Bhimavaram during the academic year 2021-2024.

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Date : 05-May-2024

TO WHOM IT MAY CONCERN

This is to certify that Ms. P. Vijaya Bharathi final year student of B.Sc [BT.BC.C] with Reg.no. -213117121285 from the Department of Life Sciences, B.V. Raju College, Bhimavaram has successfully completed industrial training from March 1st , 2024 to May 5th, 2024 in R&D Department of our Research and Development Centre, Pashamylaram, Hyderabad.

During this period we found her diligent, hardworking and sincere. we wish her all the best for all future endeavors.

For Gensynth Laboratories Pvt. Ltd

Madhusudhan Reddy

Manager - Human Resources

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An internship Project On

" ISOLATION AND IDENTIFICATION OF BACTERIA ASSOCIATED WITH WOUND SEPSIS "

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfillment of The Requirement for The Award of The Degree Of

Bachelor of Science [B.Sc.]

Submitted by

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This is to certify that this Internship project work is entitled **"ISOLATION AND IDENTIFICATION OF BACTERIA ASSOCIATED WITH WOUND SEPSIS"** is a bonafide work done by **PENMETSA HEMA SAI DEVI** With **Reg. Number 213117121283** submitted in partial fulfilment of the work for the **Degree of Bachelor Science (MB.BT.BC&BTBCC)** in **B. V. Raju College, Vishnupur, Bhimavaram** during the academic year **2021-2024**.

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We wish her all the best in her future assignments.

P. John Dogulas
15/May/2024

Dr. JOHN DOGULAS PALLETI
M.Sc., Ph.D.
Chief Scientist & Research Director
ADHYA BIOSCIENCES
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Adhya Biosciences Pvt Ltd * Visakhapatnam *

Startup India Approval No : DIPP33648
Corporate Identification Number (CIN) : U85191AP2016PTC098209
Registration Number : 98209
Udyam Registration Number : UDYAM-AP-10-0001461
Udyog Aadhaar Registration : AP10E0017600
Import Export Registration : AA0CA2512N
An ISO Certified Number : 305023051336Q
Trade Mark Number : 5936862
GST Registration Number : 37AA0CA2512N2ZE

An internship Project On

"BIOCHEMISTRY ANALYSIS"

A Project Report Submitted to Adikavi Nannaya University in Partial Fulfilment of the requirement for the award of the degree Of

BACHELOR OF SCIENCE [B.Sc.]

Submitted By

PEETHALA ANVESH

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Under the guidance of:

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DILEEP(MLT)

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SRI BALAJI CLINICAL LABORATORY

TO WHOMESOEVER IT MAY CONCERN

This is to certify that *mr.Peethala Anvesh,* Reg No:213117121281 - B.Sc-Biotechnology,Biochemistry,Chemistry - B.V.Raju college -Vishnupur-Bhimavaram, A.P-534202, has undergone industrial training in CLINICAL PATHOLOGY in our laboratory from 15-march-2024 to 15-may-2024

With Best Wishes,

For Sri Balaji Clinical laboratory.

lab incharge

533223

SRI BALAJI CLINICAL LABORATORY

TR NO:46\KNS\2022-23

MAIN ROAD;KOTHAPETA- 533223

AN INTERNSHIP REPORT ON

"Antimicrobial and Antioxidant activity of Ocimum sanctum (Holy Basil) based Copper oxide nanoparticles"

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DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "Antimicrobial and Antioxidant activity of Ocimum sanctum (Holy basil) based Copper oxide nanoparticles" is a bonafide work done by **PAKALAPATI ASRITHA** with Reg. Number 213117121280 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

INTERNAL GUIDE

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BECS Bio Enviro Chemical Solutions

An ISO 9001:2015 certified laboratory
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CERTIFICATE

This is to certify that Ms. PAKALAPATI ASRITHA, Regd.No. 213117121280 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF OCIMUM SANCTUM PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * Visakhapatnam * BECS

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Place: Visakhapatnam

DECLARATION

I, PAKALAPATI ASRITHA , student of Bachelor Science Program with Reg. No.213117121280 in B V Raju degree college, do hereby declare that I have completed the mandatory internship from 15 February 2024 to 15 May 2024 in Bio Enviro Chemical Solutions (BECS) Lab, under the faculty guidance of E A V V RAMBABU. M, Head of the department of life sciences, B V Raju college, Bhimavaram.

P. Asritha

Signature of student

PAKALAPATI ASRITHA

ACKNOWLEDGMENT

I would like to thank **Dr. B. Satish Mohan sir, Managing Director** of Bio Enviro Chemical Solutions for giving us this wonderful opportunity for the 3 Month Apprenticeship in their institution.

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I would like to extend my sincere thanks to all my faculty advisors and especially my mentor, **E. A. V. V. Rambabu. M, Head of the Department of Life sciences,** B V Raju college for his timely guidance and constant supervision.

It has been great honour and privilege to undergo training at Bio Enviro Chemical Solutions

I would like to express my gratitude towards my parents for their kind cooperation and encouragement which help me in completion of this project.

Signature of student

PAKALAPATI ASRITHA

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1. INTRODUCTION

Nanomaterials are the basis of nanoscience and nanotechnology. Over the past few years, the interdisciplinary study and development sector known as nanostructure science and technology has expanded dramatically. Nanomaterials are typically defined as substances that are smaller than 100 nm in at least one dimension. A nanometer is one millionth of a millimetre in size and has a diameter 100,000 times smaller than a human hair. Because of the unique optical, magnetic, electrical, and other properties that arise at this scale, nanomaterials are of significant interest. These newly discovered qualities have the potential to have significant effects on electronics, medicine, the environment, and sanitation as well as on how effectively water is treated. These particles, which display highly controlled physical, chemical, and biological properties at the atomic and subatomic levels, are generally referred to as nanoparticles (NPs). Yet, due to their distinctive properties, they can be used in a variety of fields, including biology, communications, agriculture, electronics, and optoelectronics. (Eatemadi A, 2014)

Classification of nanomaterials

Nanomaterials can be categorised as zero-dimensional (quantum dots), one-dimensional (quantum wires), two-dimensional (thin films), or three-dimensional (nanostructured mater) depending on the dimension in which the size effect on the resultant property becomes apparent (Table 1).

Table 1: Classification of Nanomaterials

S.No.	Dimensions	Size	Examples
1	3-dimensions	< 100 nm	Nanoparticles, quantum dots
2	2-dimensions	< 100 nm	Nanotubes, nanowires, nanofibers
3	1-dimension	< 100 nm	Thin films, coatings
4	0-dimension	< 100 nm	Semiconductor quantum dots (QDs), nanoparticles and colloidal particles

Due to broad and intense agricultural practises, there has been a noticeable rise in the environmental discharge of some dangerous acute natural pollutants in recent years. The chemical equilibrium of organ phosphorus compounds enables them to penetrate deeper into the soil and reach groundwater. (Azizi S. Mohamad R, 2017)

Moreover, they are sufficiently water soluble and biodegradation-resistant. Considering how long they remain in the environment, many pesticides have high levels of toxicity. Thus, it is crucial to remove

these chemically persistent, non-biodegradable pesticide pollutants from contaminated water. Due to its potential to address environmental challenges, broadband semiconducting photocatalysis has attracted the interest of many professionals in recent years. Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties(Eatemadi A, 2014) (Pês BS, 2014).

Applications of copper nanoparticles

Cu-NPs have diverse scientific applications. They are very effective against different pathogenic microbes. A high concentration of Cu-NPs generates reactive oxygen species in bacterial cells which eventually cause cell lysis. Moreover, Cu-NPs have exhibited anticancer and antifungal activities. Due to their antimicrobial activity, it is also used for food preservation and agricultural field to draw protection against different pathogenic fungi and bacteria. Copper-based nano fertilizer and nano- insecticides promote growth and nutrients in crop plants. Copper-based bioremediation plays a pivotal role in waste-water treatment and removal of heavy metals from soil. Copper is a good conductor of electricity hence it is used as a super-conductor and has a significant contribution to the modern electronic field. In the following figure, we have summarized the different applications of Cu-NPs and also elaborate its major application in the following context.

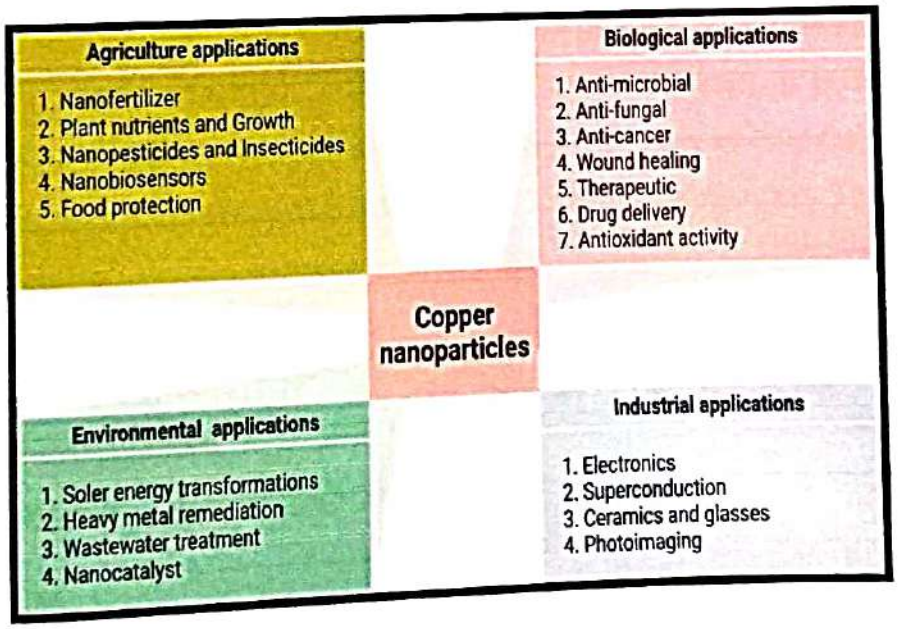


Fig. 2: Applications of copper nanoparticles

2. REVIEW OF LITERATURE

Synthesis of nanoparticles involves a multidisciplinary technology with different fields of science (biology, chemistry and physics) and engineering research. Different methods have different routes for the synthesis of nanoparticles. Number of physical methods has been reported for the synthesis of nanoparticles but each method has some limitations in which primarily the cost of the instrument is a common hurdle. Secondly, larger space and high energy requirement for set-up of all the experimental conditions are a stumbling block.

Chemicals can be used for the effective generation of nanomaterials that are stable in nature. With the development of new chemical methods, the concern for environmental contaminations is also heightened as the chemical procedures involves use of toxic solvents, high energy consumption and large amounts of hazardous byproducts that may create a high risk to the environment and human health. These methods also require capping agents for stabilization of the nanoparticles. Furthermore, the production cost is high and it generates limited shapes of nanoparticles which greatly diminishing their potential properties and applications.

Methods for synthesis:

The top-down approach uses initial macroscopic structures. The methods begin with larger particles which are reduced to nanoparticles after a sequence of operations performed over them. Main shortcomings of these methods are that they involve large installations and hug capital is required for set up. The methods are quite expensive and not suitable for large-scale production. The method is suitable for laboratory experimentation. The approach is based upon the grinding of materials. These methods are not suitable for soft sample. (Pês BS, 2014)

Methods in top-down approach:

1. Physical vapour deposition.
2. Chemical vapour deposition.
3. Ion implantation.
4. Electron beam lithography.
5. X-ray lithography.

Bottom-up approaches of production of nanomaterials comprise the miniaturization of materials constituents to the atomic level with the additional procedure leading to the development of nanostructures. Throughout the further progression, the physical forces working at nanoscale combined simple units into larger stable structures. The methodology is principally based on the principle of molecular recognition (self-assembly). Self-assembly means growing more and more things about one's kind from themselves. Many of these techniques are still under development or are just beginning to be used for the commercial production of nanoparticles

Methods in a bottom-up approach:

1. Sol-gel synthesis
2. Colloidal precipitation
3. Hydrothermal synthesis
4. Organometallic chemical route
5. Electro deposition.

INTRODUCTION TO TULASI

In ethno- botanical literature of India, several hundreds of plants are known to have the potential to treat many diseases. Among them the most popular ones is Tulasi traditionally used for the treatment of diseases. The Tulsi plant is known as "The mother medicine of Nature " and "The Queen of Herbs". For the docking studies, the chosen plant species is Ocimum tenuiflorum, which is also known as Ocimum sanctum. The common name of Ocimum tenuiflorum is "Krishna tulsi"

DISTRIBUTION:

Ocimum tenuiflorum is native to India, Iran and now cultivated in Egypt, France, Hungary, Italy, Morocco, USA. Basil is naturally found wild in the tropical and subtropical regions of the world. Basil thrives in warm and temperate climates. Basil is an aromatic, low growing herb the leaves of which have a bright green to purple ovate colour, and is grown in warm, tropical climate. Basils are native to tropical Asia and are likely to have originated in India. It is an annual plant, usually propagated through seeds. It is widely distributed in tropical areas and can be easily found at an altitude of 1800 meters in Himalayan region (shinde, 2014)

TAXONOMIC STUDY

It is a much-branched small herb and 30 to 75 cm in height. All parts of Tulasi are used in medicine, especially fresh and dried leaves. Leaves are oblong, acute with entire or serrate margin, pubescent on both sides and minutely gland dotted. The leaves are green in color with aromatic flavor and slightly pungent taste. Flowers are purplish in color in the form of racemes. Nutlets are subglobose, slightly compressed, pale brown or red in color. Seeds are reddish black and subglobose. Leaves have petioles and are ovate, up to 5 cm long, usually slightly toothed. The flowers are purplish in elongate racemes in close whorls. The two main morphotypes cultivated in India and Nepal are green-leaved (Sri or Lakshmi tulasi) and purple-leaved (Krishna tulasi) (Kumar, 2018)

BOTANICAL CLASSIFICATION:

Domain: Eukaryota
Kingdom: Plantae
Phylum: Spermatophyta
Sub-phylum: Angiospermae
Class: Dicotyledonae
Order: Lamiales
Family: Lamiaceae
Genus: Ocimum
Species: tenuiflorum

THERAPEUTIC USES:

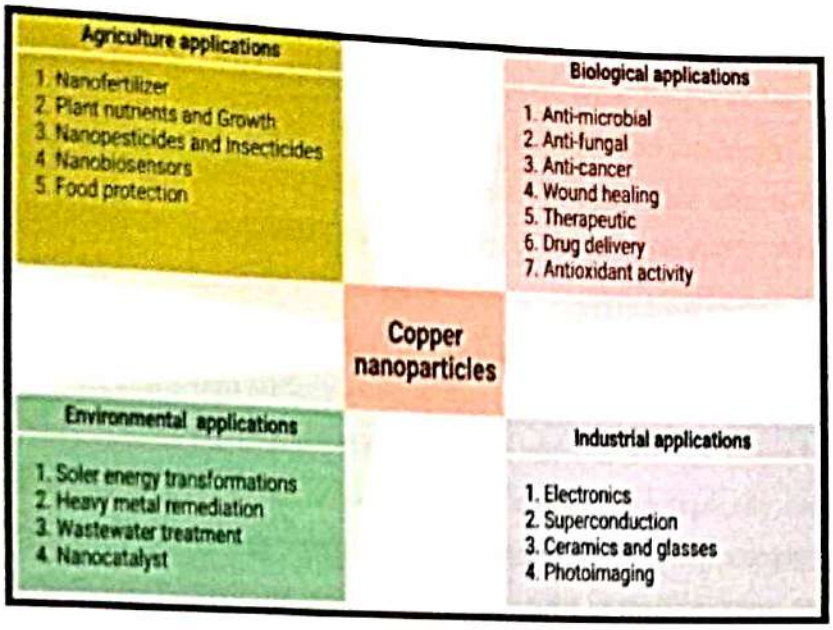
The Holi basil is the most sacred plant and it is mentioned in Charaka Samhita and Susruta Samhita, as every part of plant has its own medicinal properties. This immortal plant is the most sacred plant in Hindu religion, which contains in itself every perfection, cures every ill, and purifies and guides to the heavenly paradise those who worship it. These studies reveal that tulasi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti- oxidant, anti-cataract, anti-inflammatory, chemopreventive, radio protective, hepato protective, neuro-protective, cardio-protective, anti-diabetic, anti-hypercholesterolemia, anti-hypertensive, anti-carcinogenic, analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant, memory enhancement, anti- asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritic, adaptogenic, anti-stress, anti- cataract, anti-leukodermal and anti-coagulant activities (MM, 2014) (Chanthaboury M, 2022)

Green synthesis of CuO NPs using plant extract

Copper Oxide Nanoparticles:

Copper oxide (CuO) is a p-type SMO with a monoclinic crystal structure and a relatively small band gap of 1.7 eV (1,2). CuO is naturally nontoxic and easily available with a low processing cost. Moreover, it has high thermal stability along with excellent optical, chemical, and electrical properties.

Therefore, the development of green synthesis of CuO-NPs is advancing as a key branch of nanotechnology where the use of biological entities like plant extract or plant biomass, microorganisms for the generation of NPs could be an alternative to chemical and physical methods in an eco-friendly way. Hence, this project describes the green-inspired synthesis of CuO-NPs hat can provide advantage over the physical and chemical methods. Novel heterogeneous metal oxide semiconductor materials have recently been developed as a promising alternative to conventional wastewater treatment. These materials have drawn significant attention due to their photocatalytic ability in the degradation of various environmental pollutants such as detergents, pesticides, dyes, and volatile organic compounds under UV light irradiation. In contrast to conventional wastewater treatment, these photocatalysts have the ability to transform contaminants into safe compounds while they are still in the wastewater. With CuO being well-known as a non-toxic UV and photoactive material, the use of photocatalysts in the treatment of water pollution has gained increasing attention. CuO nanoparticle-based composite materials have been thoroughly investigated for their potential to increase CuO efficiency in photocatalysis by metal ion loading, coupling with other metal oxides, and combining with carbonaceous materials. The goal of the current effort is to create zinc oxide nanoparticles utilising a green synthesis method. (Prasad). (Bordbar M) (Bhuyan T. Mishra K. Khanuja M. 2015)



Pharmacological Activities

Antibacterial activity:

The science dealing with the study of the inhibition and treatment of diseases caused by microorganisms is known as medical microbiology. Its sub-disciplines are virology (study of viruses), bacteriology (study of bacteria), mycology (study of fungi), phycology (study of algae) and protozoology (study of protozoa). For the treatment of diseases inhibitory chemicals used to kill bacteria's or inhibit their growth, are called antibacterial agents. The ability of substances to limits or prevent the growth of bacteria's is called antibacterial activity of the material. (Bhuyan T. Mishra K. Khanuja M, 2015)

Antifungal activity:

It is defined as the ability of a substance to limits or inhibits the growth of yeasts and other fungal organisms. Antifungal agents are used to kill or inhibit the further growth of fungi. In medicine, they are employed as a treatment for infections such as athlete's foot, ringworm and thrush and work by exploiting differences between mammalian and fungal cells. They kill off the fungal organism without side effects on the host.

Unlike bacteria, both fungi and humans are eukaryotes. Thus, fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release. Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance. Therefore, a greater attention has been paid to antimicrobial activity screening and valuating methods. The antimicrobial activities of nanoparticles have been evaluated using disc diffusion, flow cyto-fluorometric and bioluminescent methods

3. MATERIALS AND METHODS

Materials and Methods

Chemicals

Copper acetate procured from the firm Molychem was used as a precursor for the synthesis of copper nanoparticles and Nutrient Agar Media for the Antibacterial and Antifungal activity.

Glassware and general apparatus

Conical flasks and Beakers, Volumetric flasks, measuring cylinders, Test tubes, Centrifuge tubes, Hot air Oven, Watch Glass and Hotplate.

Chromic acid wash

Follow all normal safety precautions when using concentrated acids and acid solutions. Acids can severely burn the skin. Dispose of all acids properly. A chromic acid wash has hydrolytic and oxidative capabilities for the chemical decomposition of biological molecules. The acid may also dissolve mineral deposits.

To prepare a chromic acid wash, mix 2 g of sodium or potassium dichromate with sufficient distilled water to make a paste of chromate salt. Add 150ml of concentrated sulphuric acid. Increase the proportions to make larger amounts.

Tulasi *(Ocimum sanctum)* leaf extract preparation:

Fresh leaves of Tulasi *(Ocimum sanctum)* were collected. The collected leaves were thoroughly washed several times using deionized distilled water, air-dried and chopped finely into small pieces. Twenty grams of chopped leaves were taken in pestle and mortar. Leaf extract was prepared by weighing 20g of fine powder with 200 ml of double distilled water boiled at 60°C in Erlenmeyer flask for 20 min. The Tulasi *(Ocimum sanctum)* leaf extract was then filtered through Whatman No.1 filter paper. The filtered was used for the synthesis of nanoparticles in room temperature.

Preparation of 100 ml aqueous $CuCH_3COO_2$ (0.1M) solution

Copper Acetate $CuCH_3COO_2$ procured from the firm Molychem was used as a precursor for the synthesis of Copper nanoparticles. 1.81 gms of $CuCH_3COO_2$ was dissolved in 100 ml of deionized water for use in further experiments.

Green Synthesis of copper nanoparticles:

Plants consists of large number of biologically active compounds and hence, most of the plants have proven record for their anthelmintic, antitumor, antimutagenic, antibacterial and fungicidal properties. The synthesis of metallic NPs involves simple mixing of metal solution with extract of plant. Nanoparticles are produced in the medium due to reduction of metal ions. The reaction to give metallic NPs is as shown in Figure.

Many earlier investigations revealed that Cu NPs can be synthesised by the application of most common precursor copper salts namely, cupric acetate (monohydrate) ($(CH_3COO)_2Cu \cdot H_2O$) (Copper chloride di-hydrate ($CuCl_2 . 2H_2O$) and Copper sulfate pentahydrate ($CuSO_4.5H_2O$) Various factors such as concentration, pH, temperature, influence the nature and properties of synthetic Cu NPs as well as CuO NPs.

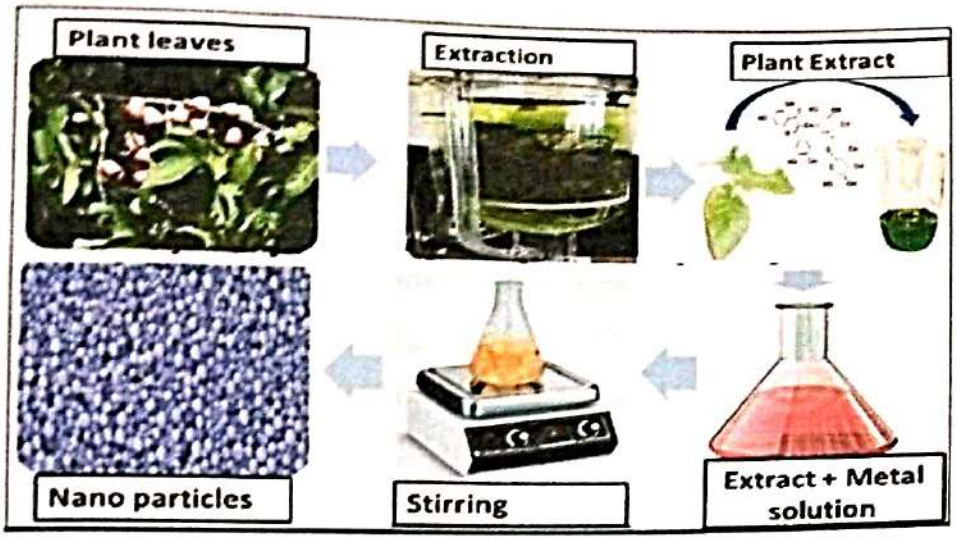


Fig. : Green synthesis of copper nanoparticles.

100 ml of metal solution (stirred for 30mins)

↓

30ml Tulasi *(Ocimum sanctum)* leaf extract added to the metal solution drop wise

↓

Place the beaker on hot plate with continuous stirring

↓

Beaker is covered

↓

Maintaining Temperature at 60°C for 3hrs Continuous Stirring

↓

Brown Colour Precipitate is the formed

Figure : Flow chart for the preparation of CuO Nano Particles

Antimicrobial activity of CuO-NPs

Biogenically synthesized CuO-NPs also have shown antimicrobial activity against wide range of microbes. In this section we have discussed antimicrobial activity of CuO-NPs, Most of the bacteria and pathogenic fungi are harmful for environment, agriculture, and living organisms. The antibacterial character of CuO-NPs against pathogenic fungi and bacteria is due to change in the cell permeability when the plasma membrane of bacterial cell comes in contact with CuO-NPs. This is due to the reason that CuO-NPs move to the cytoplasm and affect the normal functioning of cell resulting in the formation of zone of inhibition against the microbes. Further, CuO-NPs damage the cell membrane which results in the death of bacteria. This can be explained by the mechanism that oxygen species are released on the surface of NPs that react with hydrogen to produce hydrogen peroxide. The generated hydrogen peroxide either stops the growth of bacteria or kills the bacteria.

The bacterial cell membrane disruption takes place by CuO-NPs, due to formation of superoxide and hydroxyl radicals. The zone of inhibition directly proportional to the antibacterial activity of NPs, but inversely proportional to the size of CuO-NPs. Hence, as the size of NPs decreases, higher is the zone of inhibition and greater is the antibacterial action. The formation of hydrogen peroxide is related to the size and surface area of synthesized NPs. Smaller the CuO-NPs and larger the surface zone per unit area, greater is the formation of oxygen species and higher is the formation of hydrogen peroxide. The antibacterial activity has also been found to depend upon the shape of nanoparticles, type of synthesis and concentration of the CuO-NPs

Antifungal activity:

fungal and human cells are similar at the molecular level, making it more challenging to detect a target for an antifungal drug to attack that does not also exist in the infected organism. Consequently, there are often side effects to some of these drugs. Some of these side effects can be life-threatening if the drug is not used correctly. Antifungals are frequently after to manage mould growth in damp or wet home materials. Sodium bicarbonate (baking soda) blasted on to surfaces acts as an antifungal agent. Another antifungal serum applied after or without blasting by soda is a mix of hydrogen peroxide and a thin surface coating that neutralizes mould and encapsulates the surface to inhibit spore release.

Some paints are also produced with an added antifungal agent for use in high humidity areas such as bathrooms or kitchens. Other antifungal surface treatments typically contain variants of metals known to suppress fungus growth, e.g., Pigments or solutions containing copper, silver or zinc. These solutions are not usually accessible for the general public because of their toxicity. At the moment, there has been a huge interest in researching and developing new antimicrobial agents from various sources to combat microbial resistance.,

Instruments Used:

MAGNETIC STIRRER WITH HOT PLATE:

Magnetic stirrers are widely used in scientific experiments and industrial production. In addition to their excellent stirring performance, they also have the advantage of being easy to use and clean. Stirring is utilized to produce uniform mixes and improve those mixers. A chemical reaction occurs when liquid or liquid-like substances interact with one another. This reaction causes the substances to aggregate. Mixing equipment is used in most vessels that need to be stirred. The way they're designed, as well as the mixing gear, impact how effectively they combine the components. Magnetic stirring is a process you can use to stir liquids in open and closed systems. This process can be performed under pressure or vacuum over a wide temperature range. Additionally, magnetic stirring can be used with any chemical substance.

Uses:

Magnetic stirrers are used to mix fluids rapidly of various viscosities. They're most often seen in laboratories studying biology and chemistry. Magnetic stirrers are utilized in a variety of applications.

Working:

A magnetic stirrer, often known as a Magnetic mixer, is a machine that mixes ingredients by attracting like charges and repulsing dissimilar ones. A magnetic stirrer uses a rotating magnetic field to stir a non-magnetic liquid in a container. The rotating field is created by a magnet mounted on the stirrer underneath the container. As the magnet rotates, it creates a rotating magnetic field that extends into the liquid.

WEIGHING BALANCE:

A weighing balance is a laboratory instrument that is used to measure the mass or weight of an object. They are commonly used in analytical and research laboratories, as well as in the pharmaceutical and chemical industries, where precise measurements are critical. Weighing balances are also used in commercial settings such as in food processing, jewellery making, and shipping.

A typical weighing balance consists of a platform or pan on which the object being measured is placed, and a beam or sensor that detects the weight of the object. The beam or sensor is connected to a display unit that shows the weight in the desired units, such as grams, milligrams, or ounces.

There are three main types of weighing balances:

- Mechanical balances: measure weight using physical components such as levers and counterweights.
- Analytical balances: These are highly accurate and sensitive balances that can measure weight to within a few thousandths of a gram.
- Digital balances: These balances use electronic sensors to measure weight and digitally display results.

Weighing Balance principle: The principle behind weighing balances is based on the concept of balance of weight. This means that the weight of an object is balanced against a known weight, such as a set of calibrated weights until equilibrium is reached. The balance then displays the weight of the object being measured. In conclusion, weighing balances are essential tools in laboratory and industrial settings where accurate and precise measurements are critical. They come in different types and models, each with its own unique features and capabilities

HOT AIR OVEN:

A hot air oven is a type of dry heat sterilization. Dry heat sterilization is used on equipment that cannot be wet and on material that will not melt, catch fire, or change form when exposed to high temperatures. Moist heat sterilization uses water to boil items or steam them to sterilize and doesn't take as long as dry heat sterilization. Examples of items that aren't sterilized in a hot air oven are surgical dressings, rubber items, or plastic material.

Items that are sterilized in a hot air oven include:

- Glassware (like petri dishes, flasks, pipettes, and test tubes)
- Powders (like starch, zinc oxide, and sulfadiazine)
- Materials that contain oils
- Metal equipment (like scalpels, scissors, and blades)

Principle: Hot air ovens use extremely high temperatures over several hours to destroy microorganisms and bacterial spores. The ovens use conduction to sterilize items by heating the outside surfaces of the item, which then absorbs the heat and moves it towards the centre of the item.

The commonly-used temperatures and time that hot air ovens need to sterilize materials is 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.

AUTOCLAVE:

An autoclave is a moist heat sterilizer as the Moist heat sterilization uses water to boil items or steam them to sterilize with specified pressure. Most of the growth mediums and pipette tips and other biological medias are generally preferred for moist heat sterilization.

Principle: Autoclave works under the principle of Moist Heat Sterilization as it uses high pressure and high temperature for longer periods to sterilize the biological medias and other compounds inorder to kill the bacteria and other microorganisms. Generally the autoclave is maintained at 121°C at 15lbs pressure for 1 Hour

Incubator:

Principle: It depends on the principle of thermoelectricity. The incubator has a thermostat which maintains a constant temperature by creating a thermal gradient. For most the organisms 37°C is the favourable temperature while yeast organisms require 30°C.

LAMINAR AIR FLOW CHAMBER:

Principle: It is an enclosed workstation that is used to create a contamination free work environment through filters to capture all the particles entering the cabinet. These are the most useful for the aseptic cabinets the effluent air is drawn into the face of the user.

In a biosafety cabinet, both the sample and user are protected while in the laminar flow cabinet, only the sample is protected and not the user. Laminar flow cabinets are similar to bio safety cabinets with the only difference being that in laminar flow cabinets the effluent air is drawn into the face of the user.

Micropipette:

A micropipette is acommonyetan essential laboratory instrument used to accurately and precisely transfer volumes of liquid in the microliter range. Micropipettes are available in single channel and multi-channel variants.

- All the other chemicals are procured from Qualizens limited.
- For all the assays the Millipore degraded distilled water has been used.

Characterization of CuO nanoparticles:

FTIR analysis

The chemical composition of the synthesized magnesium nanoparticles was studied by using FTIR spectrometer (Perkin-Elmer LS-55- Luminescence spectrometer). The solutions were dried at 750°C and the dried powders were characterized in the range 4000–400 cm -1 using KBr pellet method

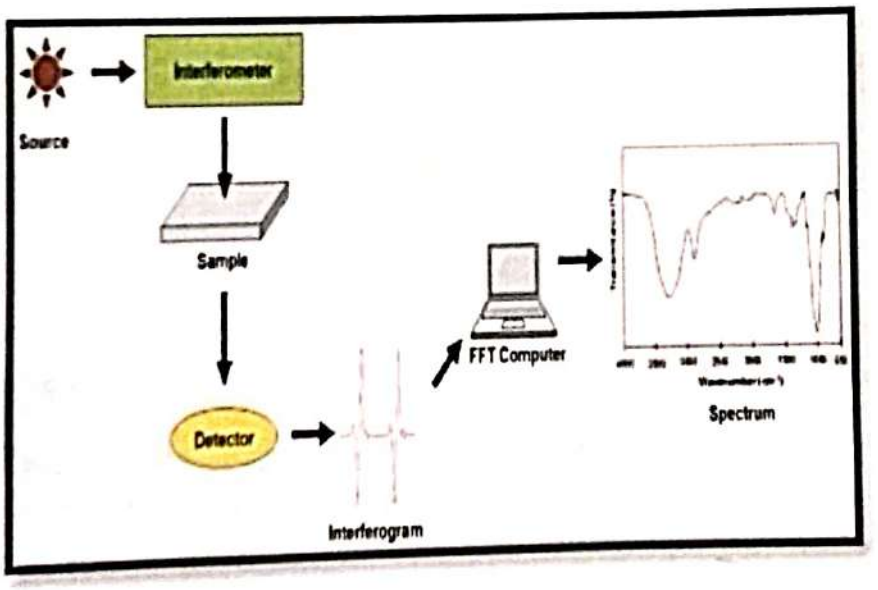


Fig. : FTIR Instrumentation analysis

XRD Analysis

The phase variety and grain size of synthesized silver nanoparticles was determined by X-ray diffraction spectroscopy (Philips PAN analytical). The synthesized silver nanoparticles were studies with CUKα radiation at voltage of 30 kV and current of 20 MA with scan rate of 0.030 /s. Different phases present in the synthesized samples were determined by X' pert high score software with search and match facility. The particle size of the prepared samples was determined by using Scherrer's equation as follows

$$D \approx 0.9\lambda / \beta \cos\theta$$

Where D is the crystal size, λ is the wavelength of X-ray, Θ is the Braggs angle in radians and B is the full width at half maximum of the peak in radians

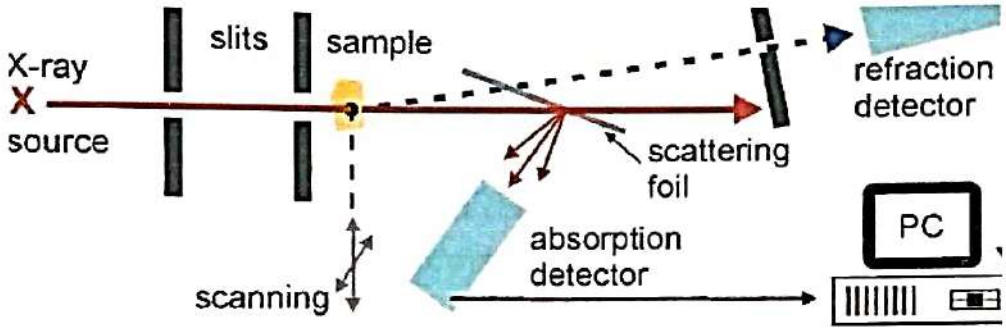


Fig. 6: XRD Instrumentation analysis

SEM (Scanning Electron Microscope)

Scanning electron microscopy (SEM) analysis was carried out using Carl Zeiss Japan, Inodel machine. Thin film of nanoparticle powder sample was prepared on carbon coated tape by adhering small amount of dried fine powder of sample on the grid, excess sample was removed with the help of blotting paper. The film on the SEM grid was allowed to dry by putting it under a mercury lamp for 5 min. The SEM analysis was used to determine the surface structure of biologically synthesized CuO Nanoparticles.

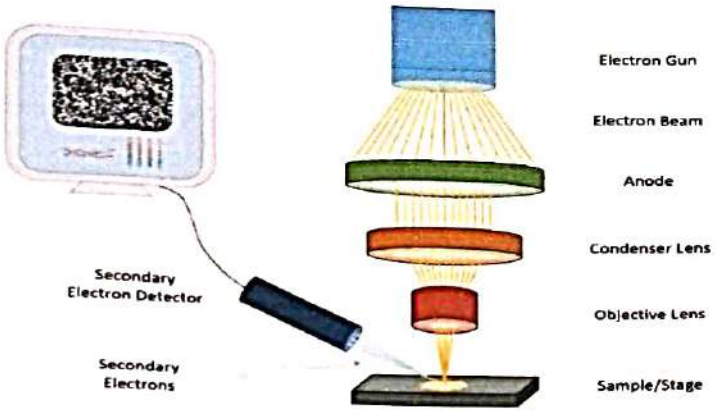


Fig.4: SEM Analysis depict

4. RESULTS AND DISCUSSION

Green Synthesis of Copper Oxide Nanoparticles using Tulasi *(Ocimum sanctum):*

Copper Oxide nanoparticles were synthesized successfully by the green synthesis method using Tulasi *(Ocimum sanctum)* leaf extracts. During exposure to leaf extracts, reduction of copper ions into copper nanoparticles was observed as a result of the colour change from pale Brown colour to biscuit colour. In this method the aqueous leaf extract acts as a solvent with manifold roles as promoter, stabilizer and template for the synthesis of nanoparticles.

Characterization of CuO nanoparticles: Copper oxide nanoparticles obtained were preserved in plastic vials for further characterization. Characterization studies needed to study the exact size, shape and other properties of CuO nanoparticles. In this work I have used XRD and FTIR and SEM analysis to study the CuO nanoparticles.

FT-IR analysis:

To identify the key factors for the copper ion (Cu+) reduction into copper nanoparticles (Cu-NPs), FTIR spectroscopy analyses were carried out. FT-IR analyses show the shifts in the absorbance peak of copper nanoparticles with different points ranging from 561 to 3390cm^{-1} as shown in (Fig. 7). It is evident that there is presence of functional groups such as alkaloids, phenols, halo compounds, and primary and secondary amines in the extract. The IR spectrum of the biosynthesized Cu-NPs showed the peak value at 561,600,679, 1360, 1644, and 3390cm^{-1}. The peak value 561 cm^{-1} relates to the Cu-O bond in the CuO nanostructure group. A peak at 600cm^{-1} and 679cm^{-1} relates to the C-I stretch and C-Cl bond in halo compound group. The peak at 1350cm^{-1} was assigned to be C-H bend in the methane group, 1644cm^{-1} relates to the C-C stretch in the aromatic group and peak at 3390cm^{-1} O-H stretch in the primary and secondary amide group. The peaks corresponding to O–H, C=O, C–N, C–H, C=C are the prominent peaks associated with CuO- NPs. Several scientific findings had ascribed the absorption at 3000–3350 cm^{-1} to N–H of amine or O–H of alcohol/phenol. Absorption peaks in the range of 820–880 cm^{-1} have been attributed to aromatic C–H

bending. A strong absorption peak at wavelength 2900-3000 cm^{-1} was credited to C–H. The absorption band observed at wavelength 1600–700 is traceable to CuO. The absorption band at 1600–1790 are linked to –C=O of carbonyl.

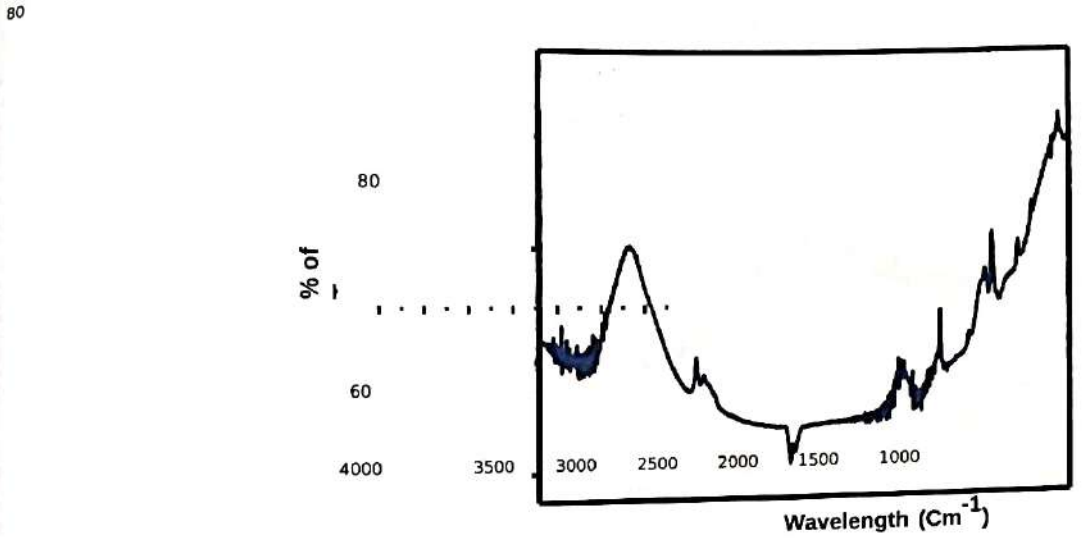


Fig. 7: FTIR analysis of Cu-NPs

XRD Analysis:

XRD technique which is used for the phase determination of crystal structures of the nanoparticles. The XRD analysis of the synthesised particles show characteristic diffraction peaks at 2θ of 32.37, 35.19, 38.49, 48.14, 58.01, 61.31, 66.01, 67.66, 72.37 and 75.19, which were assigned to (110), (11-1), (111), (20-2), (202), (113), (022), (220), (31-2) and (004) planes respectively. From the analysis by XRD, the monoclinic structure of CuO NPs prepared from Azadirachta indica leaf extract was suggested. The monoclinic structure of CuO, so obtained, is then confirmed by comparison with the data provided in MATCH! Software [card no. 96-901-5925] and the cell parameter of the synthesised particle is 4.6832 A°. All the diffraction peaks corresponds to typical monoclinic structure and no other phase was observed.

The average crystallite size of CuO nanoparticles was calculated using the Scherrer formula, D=0.9 $\lambda/\beta \cos\theta$, where λ is the wavelength of X-ray radiation, β is the full width at half maximum (FWHM) of the peaks at the diffracting angle θ. It was found to be 25 nm indicating its crystalline nature.

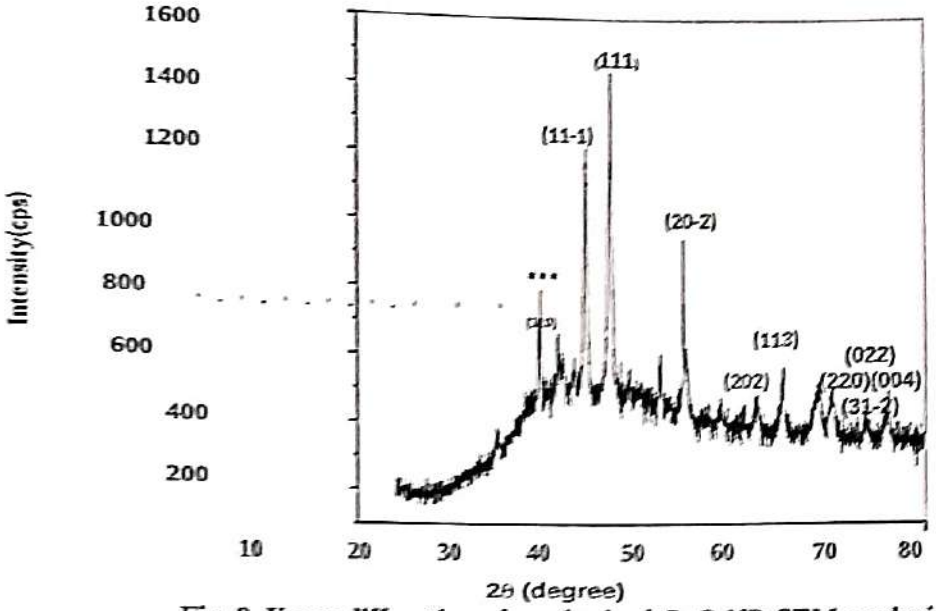


Fig. 8. X-ray diffraction of synthesized CuO NPsSEM analysis:

The technique of scanning electron microscopy is used to visually examine a surface in order to identify contaminants or unidentified particles. For morphological data and particle characterization, SEM analysis is used. The SEM pictures were seen at various magnification settings between 2 nm and 200 nm. The produced nanoparticles were spherical in form and ranged in diameter from 33.6 to 120 nm on average. The biosynthesized CuO NPs produced by Lippia adoensis were reported to have a spherical shape and nanorod shaped structures by (Vinay et al., 2018) using SEM and TEM. According to investigation of P. niruri leaf extract revealed a colour change from pale white to brown and a cylindrical morphology with an average size of 5 nm (Demissie et al., 2020). SEM pictures of produced copper oxide nanoparticles that were aggregated and had particle sizes between 100 and 200 nm (Tahseen Ali Ibrahim et al., 2021).

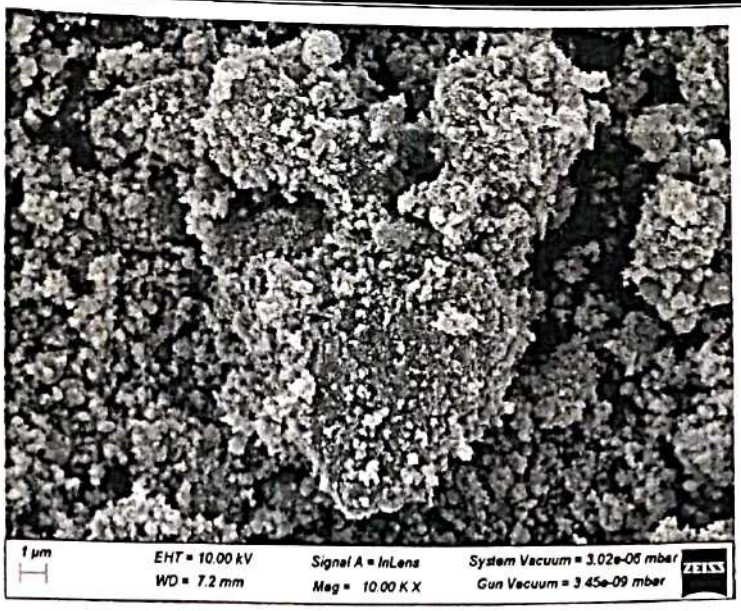


Fig: SEM Image of CuO-NPs

Antimicrobial activity of CuO-NPs:

The antimicrobial property of CuO-NPs towards Gram-positive and Gram-negative bacteria and fungi was tested using the agar well diffusion method. CuO-NPs produced using the green method had strong antibacterial activity against all microbes at concentrations of 800, 500 µg/ml, demonstrating that the dose depends on the mechanism. When the concentration of CuO-NPs against test pathogens increased, so did their antibacterial activity. CuO-NPs had the highest antibacterial activity of 25mm against Escherchia coli at a concentration of 800 µg/mL. It was decided to investigate the antibacterial activity using the well-diffusion method. The strong interaction between silver and the thiol groups found in essential bacterial respiratory enzymes may be the cause of the inhibitory effect of silver compounds. (Dinesh et al., 2022)

S.NO	Test organisms	Zone of inhibition(mm)			
		CuO-NPs (µg/mL)			
		800	600	400	Positive control (Chloramphenicol) 100 µg/mL
1.	*Escherichia coli*	33	28	30	35
2.		30	26	24	27
3.	*Candida*	28	24	30	25

Fig.13: Antibacterial activity of CuO-NPs against *Streptococcus aureus (b) and Escherichia coli(a)*

Fig.14: Antifungal activity of CuO-NPs against Candida

Anti-oxidant activity of CuO-NPs:

Different volumes (2 - 20µl) of CuO-NPs were made up to 40µl with DMSO and 2.96ml DPPH (0.1mM) solution was added. The reaction mixture was incubated in dark condition at room temperature for 20 min. After 20 min, the absorbance of the mixture was read at 517 nm. 3ml of DPPH was taken as control. The % radical scavenging activity of the plant extracts was calculated using the following formula

$$\%RSA = \frac{\text{Abs control} - \text{Abs sample}}{\text{Abs control}} * 100$$

Where, RSA is the Radical Scavenging Activity; Abs control is the absorbance of DPPH radical + ethanol; Abs sample is the absorbance of DPPH radical + CuO NPs.

Result:

S.NO	DPPH	CuO NPs Solution	Incubation time	OD Values (517nm)
CONTROL	3ml	0	30 minutes	0.72
			1 hour	0.72
SAMPLE	2.96ml	0.06ml	30 minutes	0.66
			1 hour	0.55

Incubation in dark place

5. Conclusions and Recommendations:

Nanotechnology finds extensive applications in nanomedicine, an emerging new field. Nanoparticles can be synthesised by chemical and physical methods but these methods are quite expensive and toxic Use of biological organisms, plant extracts could be an alternative method for production of nanoparticles. The present study reports a green, eco-friendly and cost-effective approach for the synthesis of zinc oxide nanoparticles, using the Tulasi (*Ocimum sanctum*) leaf extract, which acts as a reducing and stabilizing agent . We have also studied the characterization of CuO nanoparticles. FTIR results proved that bioactive compounds responsible for copper bio reduction could be proteins and flavonoids presumed to act as reducing and capping agents for the copper nanoparticles preventing the agglomeration of the particles and thereby stabilizing the nanoparticles. The synthesized nanoparticles are then characterized by using (X-ray diffraction) XRD technique and it is found that the size of particles is about 31 nm. Also, the synthesized nanoparticles exhibit crystalline nature. This method offers a biological technique to synthesize CuO nanoparticles in controlled and precise manner with well-defined diverse sizes and shapes. This study also suggests that green synthesized method can be used as an alternative to the existing chemical and physical methods. More research is needed to shed light on deducing additional details and discerning a more accurate interpretation of the results obtained.

In conclusion green synthesis of CuO-NPs is much more safer and environment friendly than physical and chemical methods. CuO-NP's find application as antimicrobial agent and photocatalyst. The plant based CuO-NPs can become a major field of research and can be used extensively in the food, pharmaceuticals and cosmetic industries. The potential applications of CuO-NPs as antimicrobial agent as well as antifungal agent.

IMAGES

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AN INTERNSHIP PROJECT ON

Antibacterial and Antifungal activity of Neem (Azadirchta indica) based Copper oxide nanoparticles

An Internship report submitted to the Department of Life Sciences, following APSCHE,

Submitted by

NUNNA.MANJULA

Reg.no: 213117121279

III B.Sc.BT.BC.C

Under the supervision of

Dr. B. Satish Mohan,

Director,

BECS. AT

Bio-Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

Submitted to

VISHNU

UNIVERSAL LEARNING

DEPARTMENT OF LIFE SCIENCE

B.V. RAJU COLLEGE

Vishnupur, Bhimavaram.

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFE-SCIENCE

CERTIFICATE

This is to certify that this Internship project work entitled "Antimicrobial and Antioxidant activity of NEEM (*Azardichta indica*) based Copper Oxide nanoparticles" is bonafide work done by NUNNA.MANJULA with Reg. Number 213117121279 submitted in partial fulfilment of the work for the Degree of Bachelor Science (BT.BC.C) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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Department of Life Sciences

B.V Raju College

Bhimavaram.

B.V. RAJU COLLEGE Vishnupur W.G.Dist. A.P.-534202 BHIMAVARAM

EXAMINERS:

EXTERNAL:

INTERNAL:

BECS Bio Enviro Chemical Solutions

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NSIC No: NSIC/GP/VSP/2021/91277
Labour licence No. IRE012203014182
APPCB: PCB/ROVSP/BMW/HCE-/2022
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MSME No: UDYAM-AP-10-0013612
GST No: 37FWLPB2194C1ZL
DSIR (under evaluation)
e-Mail: bioenvirochemical@gmail.com

CERTIFICATE

This is to certify that Ms. NUNNA MANJULA, Regd.No. 213117121279 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled " IN-VITRO ANALYSIS OF AZADIRACHTA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director

DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

R&D DEPARTMENT

"R&D PROCESS AND SEARCH AND DEVELOPMENT"

BACHELOR OF SCIENCE [B.SC.]

SUBMITTED BY

N.DIVYA

REG.NO:213117121277

BT BC C

UNDER THE GUIDANCE OF

DR.K.MADHUSUNDHAN RAO M.SC,PH.D

DR. A. LAKSHMI M.SC (ORGANIC CHEMISTRY)

R&D Department & Program Coordinator at
pashmylaram patancheruvu madalam-
HYDERABAD

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DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled "R&D DEPARTMENT OF OUR RESEARCH AND DEVELOPMENT" is a bonafide work done by N.DIVYA With Reg. number 213117121277 submitted in partial fulfillment of the work for the Degree of Bachelor Science (MB BT BC & BTBCC) in B.V.Raju college,vishnupur, Bhimavaram during the academic year 2020-2023.

INTERNAL GUIDE

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BHIMAVARAM

GENSYNTH LABORATORIES PRIVATE LIMITED
CIN: U24230TG2004PTC044953
(formerly known as GENSYNTH FINE CHEMICALS PVT LTD)

Date : 03-May-2024

TO WHOM IT MAY CONCERN

This is to certify that Ms. N. Divya final year student of B.Sc [BT.BC.C] with Reg.no. - 213117121277 from the Department of Life Sciences, B.V. Raju College, Bhimavaram has successfully completed industrial training from March 1st , 2024 to May 5th, 2024 in R&D Department of our Research and Development Centre, Pashamylaram, Hyderabad.

During this period we found her diligent, hardworking and sincere. We wish her all the best for all future endeavors.

For Gensynth Laboratories Pvt. Ltd

Madhusudhan Reddy

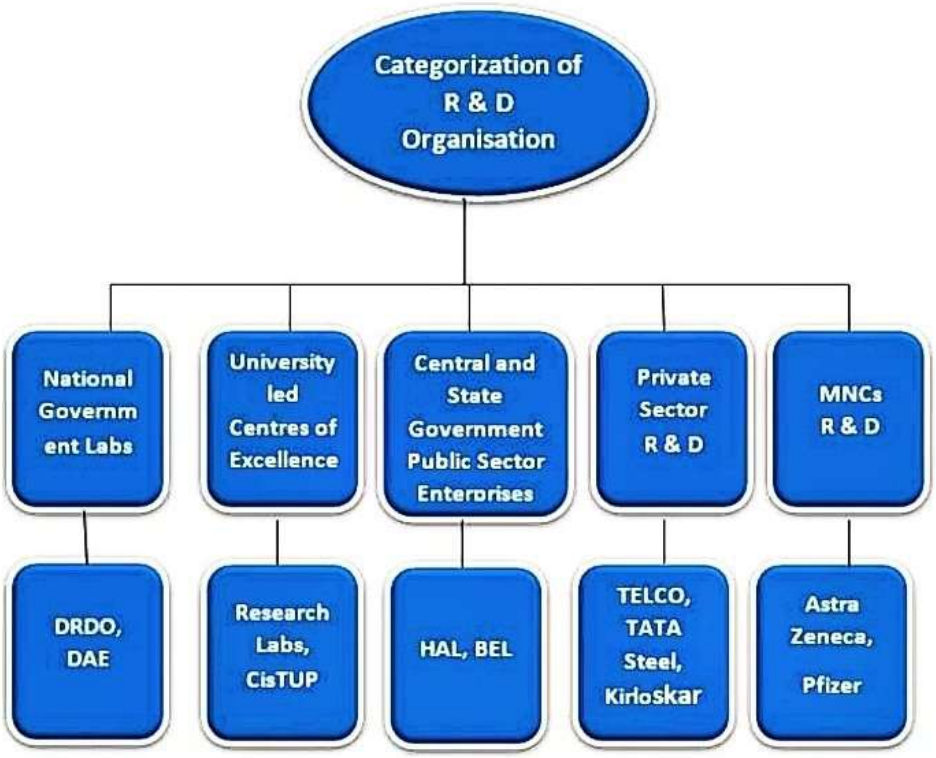
Manager - Human Resources

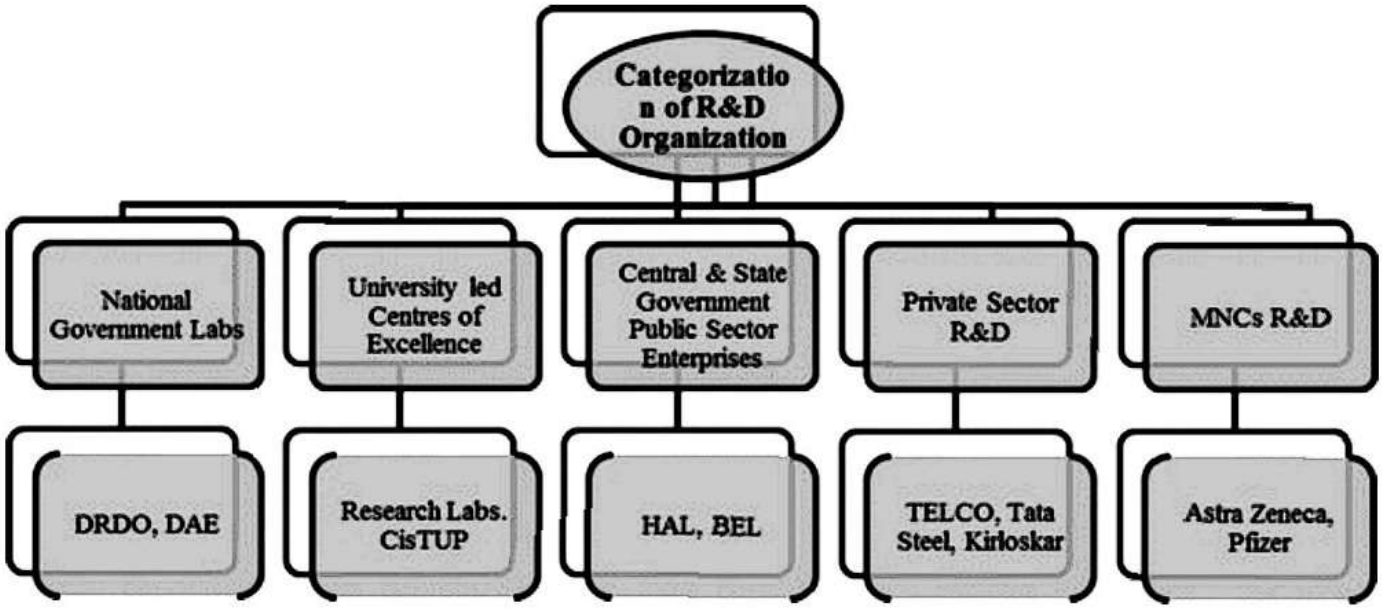
Registered Office & Factory: Plot No: 220, 239, IDA, Phase II, Pashamylaram,
Patancheru mandal, Sangareddy District - 502 307, Telangana, India.
Tele Fax: +91 8455 224133, Mobile No: +91 9490757600,
E-mail: info@gensynthfinechem.com, Website: www.gensynthfinechem.com

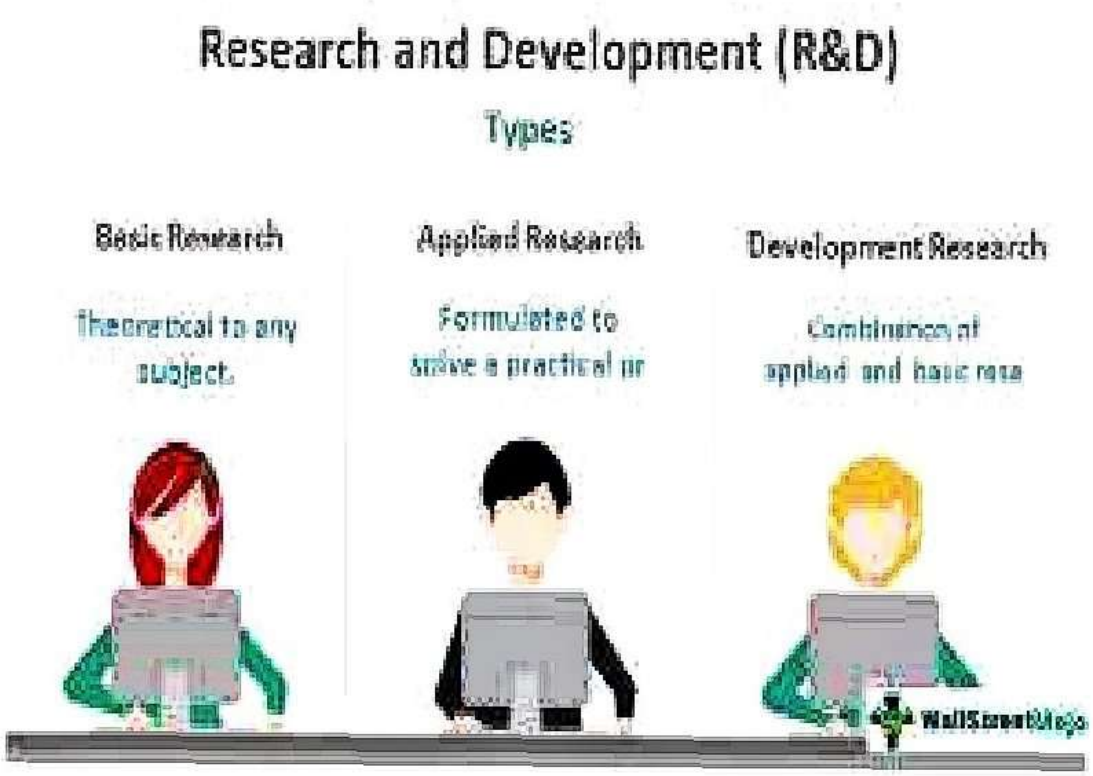
Definition of R&D

Research and development (R&D) consists of four types of activities

- *Basic research* is original experimental work without a specific commercial aim, frequently done by universities.
- *Applied research* is original experimental work with a specific aim.
- *Product development* is the improvement and extension of existing products.
- *Process development* is the creation of new or improved processes.




Categorizatio n of R&D Organization
National Government Labs
University led Centres of Excellence
Central & State Government Public Sector Enterprises
Private Sector R&D
MNCs R&D
DRDO, DAE
Research Labs. CisTUP
HAL, BEL
TELCO, Tata Steel, Kirloskar
Astra Zeneca, Pfizer


Research and Development (R&D)
Types
Basic Research
theoretical to any subject.
Applied Research
Formulated to solve a practical or
Development Research
Combination of applied and basic rese

5 – STAGES IN R&D

1.Potential and problem analayasis

2.Data collection stages

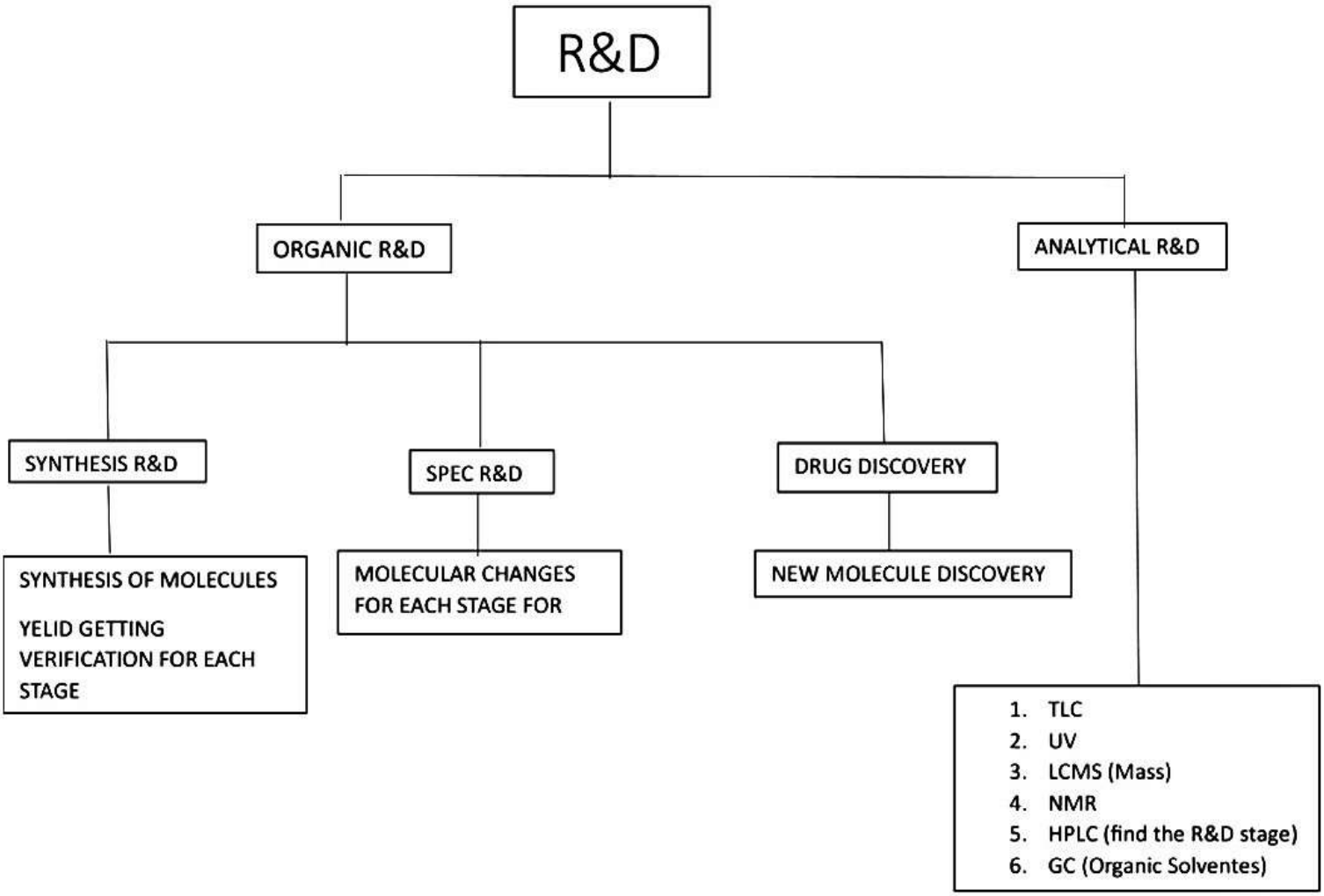
3.Product design stage

4.Product vadalation stages

5.Product revision stages

7-STEPS OF R&D

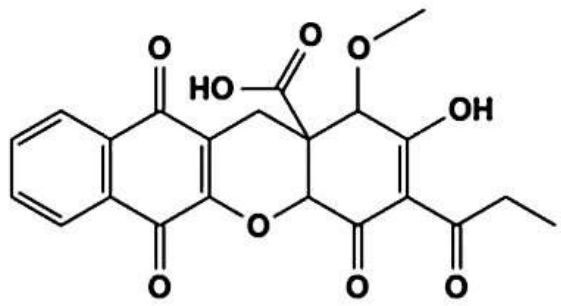
1.Ideation
2.validation
3.prototyping
4.Marketing
5.Develpoment
6.launch
7.Improvement


R&D
ORGANIC R&D
ANALYTICAL R&D
SYNTHESIS R&D
SPEC R&D
DRUG DISCOVERY
SYNTHESIS OF MOLECULES
YELID GETTING VERIFICATION FOR EACH STAGE
MOLECULAR CHANGES FOR EACH STAGE FOR
NEW MOLECULE DISCOVERY
1. TLC
2. UV
3. LCMS (Mass)
4. NMR
5. HPLC (find the R&D stage)
6. GC (Organic Solventes)

R&D MAIN ROLE FOR API

1.YIELD IMPROVEMENT :- A yield (and profit) improvement strategy consists of making measurements at critical stages, as early as possible in the assembly process, and adjusting the process parameters to achieve optimal performance

STRUCTURE :-



2. SIDE PRODUCT SEPARATION :-

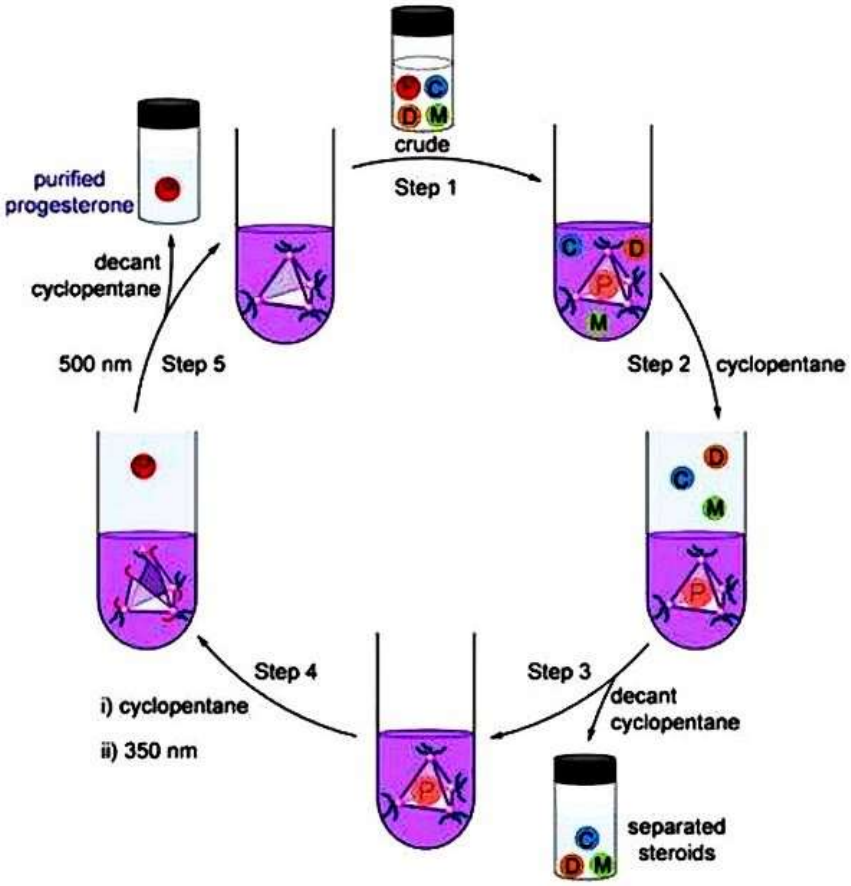
DEFINITION:

Separation techniques are those techniques that can be used to separate two different states of matter such as liquids and solids.

Separation processes or a separation method or simply a separation is methodology to attain any mass transfer phenomenon that convert a mixture of substances into two or more distinct product mixtures.

Separation is an important asset to purify component of interest from a mixtures.

Structure :-



3. IMPURITY REMOVAL :- Impurity removal is a well-established technology that is used for purification and concentration of base metals in aqueous solutions (e.g. nickel, cobalt copper, and zinc).

TYPES OF IMPURITIES

Organic Impurities

- Starting materials
- By-Products
- Intermediates
- Degradation products
- Reagents, ligands, and catalysts

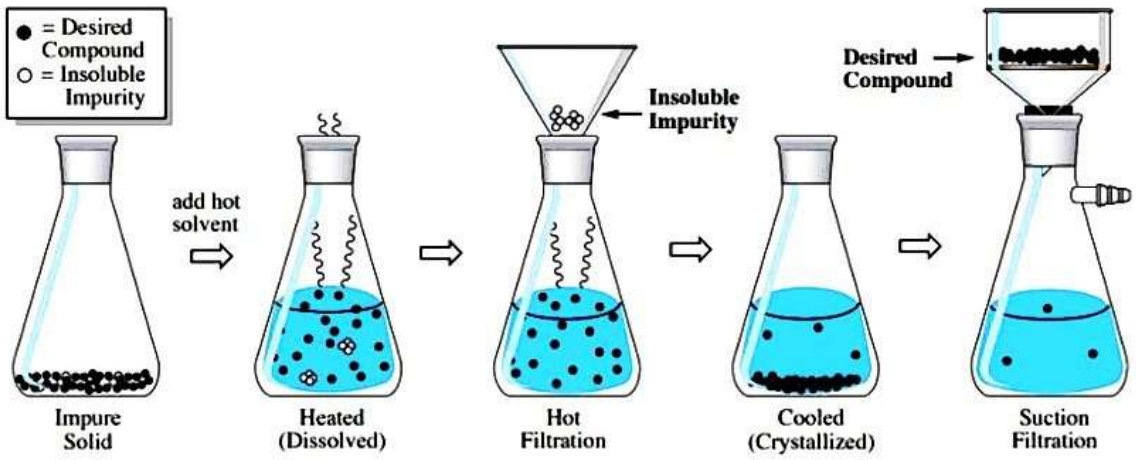
Inorganic Impurities

- Reagents, ligands, and catalysts
- Heavy metals or other residual metals
- Inorganic salts
- Filter aids, charcoal and other materials

Residual Solvents

- Class 1- solvents to be avoided
- Class 2 – solvents to be limited
- Class 3 – solvents with low toxic

VEEPRHO



Common Lab Equipment

20 most commonly used equipment in school and college laboratories

PHYSICS

1. 
Battery Eliminator

2. 
Potentiometer

3. 
Convex Lens

4. 
Magnet

5. 
Vernier Caliper

GLASSWARES

1. 
Test tube

2. 
Beaker

3. 
Flask

4. 
Reagent Bottle

5. 
Funnel

DEVICES

1. 
Bunsen burner

2. 
Microscope

3. 
Hot plate

4. 
Magnetic stirrer

5. 
Water bath

SAFETY EQUIPMENT

1. 
Lab glasses

2. 
Lab coats

3. 
Nitrile gloves

4. 
Eye wash

5. 
Emergency shower

Can and End

				
Seam-X-Lab X-Ray Automatic Seam Scanner, (non-destructive)	**Seam Sight-B** Full Automatic Seam Monitor	**CSS-1000** Anti-noise Seam Saw	**CSG-200** Countersink Gauge(digital)	**STR-100** Seam Stripper
				
SCG-200 Seamer Clearance Gauge	**RPG-100** Profile Gauge for Roll and Chuck	**CAN-1050D** Digital Can Closing Force Gauge	**CAN-10774** Planer and Shaper Pin Height Gauge	**CSM-208** Can Seam Micrometers
				
DER-400 Digital Enamel Rater	**AXL-4000** Axial Load Tester	**CBT-300** Buckle Tester Bottom for Can	**PTT-300** Pop & Tear Tester	**EBT-300** Buckle Tester for Loose Ends
				
CMT-200 Mobility / Lubricity Tester for Cans	**ELT-100** Leak Tester for End	**FWG-100-d** Flange Width Gauge (digital)	**CCAT-100** Can Comprehensive Abrasion Tester	**SM-24** Electric Belt Drive Seamer

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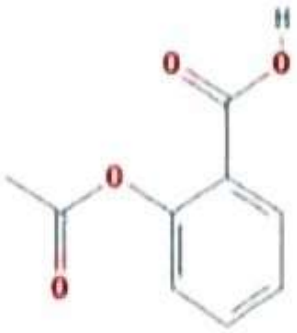
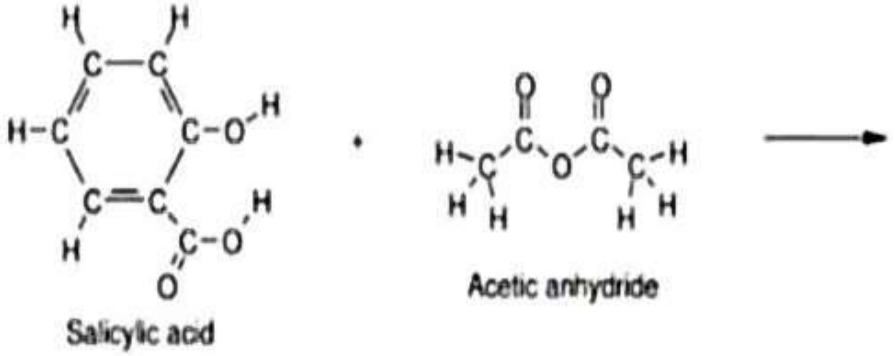
Introduction

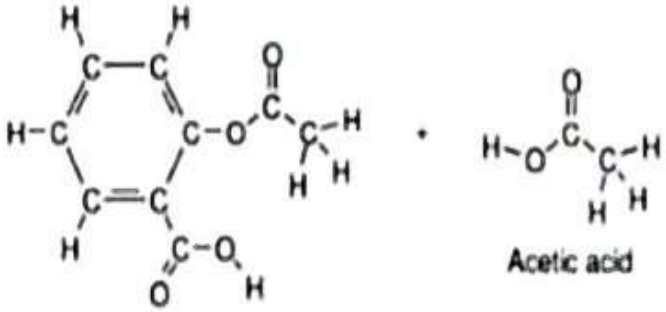


Aspirin, also known by scientific name acetylsalicylic acid which have this molecular formula $C_9H_8O_4$. At present, salicylic acid is administered in the form of aspirin which is less irritating to the Stomach of salicylic acid. To prepare aspirin, react with salicylic acid with excess acetic acid Anhydride. A small amount of strong acid is used as a catalyst that accelerates the reaction. In this Phosphoric acid will be used as a catalyst. The excess acetic acid will be put down with add the water [CITATION Tay11 \l 1033]. The aspirin product is not soluble in water so the aspirin product Hurries when adding water. The synthesis reaction of Aspirin is given below: -



Salicylic acid

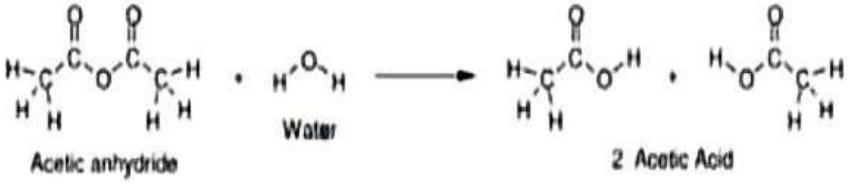
Acetic anhydride



Acetylsalicylic acid

Acetic acid

The acetic Anhydride will act as both a reactant and a solvent, a technique common in synthesis. When all salicylic acid is converted to aspirin, water will be added. This transform the acetic anhydride of acetic acid [CITATION Eld07 \l 1033]. The reaction appears below. Reaction is example of hydrolysis, division (decomposition) material with water as shown below: -



Aspirin works by suppressing the synthesis of prostaglandin and thrombocytes in Human body Prostaglandins function as local hormones produced in the body which helps in Transmission of pain signals, regulation of hypothermia, inflammation Thromboxane are involved in the aggregation of platelets forming blood clots. Do it before the irreversible disruption of prostaglandin endoperoxide synthase (PTS), also known as Cyclooxygenase 2, an enzyme that is required in the synthesis of prostaglandin and thromboxane Aspirin acts as an acetylating agent where the acetyl covalent group is bonded with serine Residues in an active site of prostaglandin endoperoxide Sensate Enzyme [CITATION Jan87 \l 1033].

Procedure

1- By using a 50-mL flask. Put about two grams of salicylic acid in the flask and weigh again. In the fume hood, then we will transfer 5.0 mL of acetic anhydride from a burette into the flask. Add three drops of catalyst to the flask.

2- Put the flask in a beaker of tap water over a burner flame. Then dissolve the salicylic acid. Then we must be heating the water to boiling, and turn off the flame. Keep the flask in the hot water bath for ten more minutes.

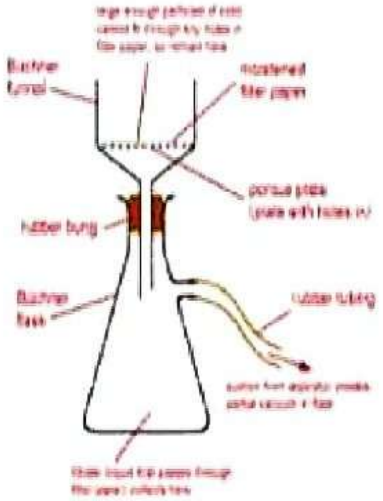
3- While the flask is in the water bath, we will add 2 mL of distilled water to the flask to decompose any acetic anhydride which maybe excess.

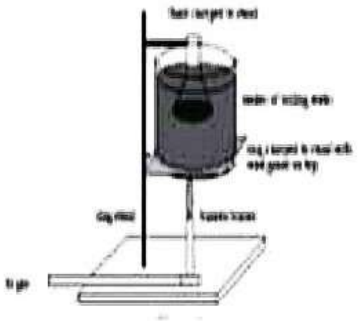
4- After five minutes, we will remove the flask from the water bath and we will add twenty mL of distilled water. Let the sample cool to normal temperature of the room. As the sample cools, crystals will appear. Cool the sample by putting the reaction flask in a cold bath.

5- Measure weight of filter paper and watch glass.

6- Set up a Büchner funnel on a vacuum flask connected to a water aspirator. Switch on the aspirator and transfer the aspirin in the funnel.

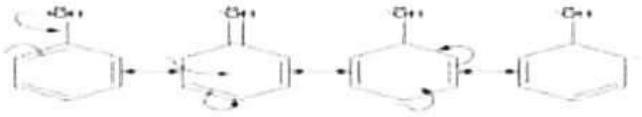
7- It is safe to discard of the filtrate down the sink with water.



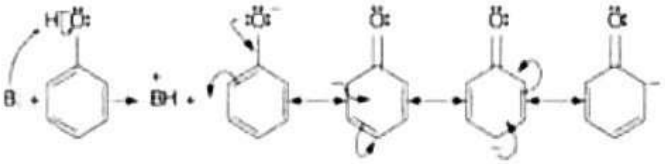


Discussion

1- Phenols are not acidic than carboxylic acids, but they are more acidic than alcohols, and they are more acidic than water. Unlike simple alcohols because it has a partial positive charge on the oxygen atom due to resonance into the benzene ring.



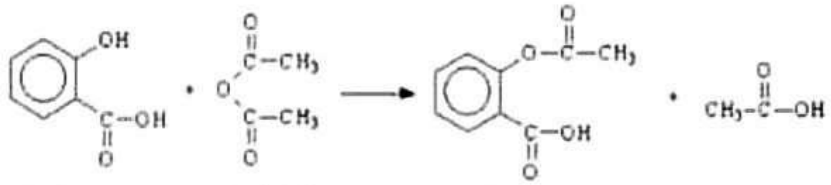
oxygen is called electronegative atom, the electrons in the oxygen and hydrogen bond orbital will attack the oxygen atom, giving us the positive hydrogen. Loss of a hydrogen ion to a base



ion creates a phenoxide that is resonance stabilized [OTATION Ela09 \l 1033].

the pKa values of phenols, alcohols and carboxylic acids which are shown that the carboxylic acids have the smallest value of pKa comparing to alcohols and phenols this makes the carboxylic acids are the most acidic components.

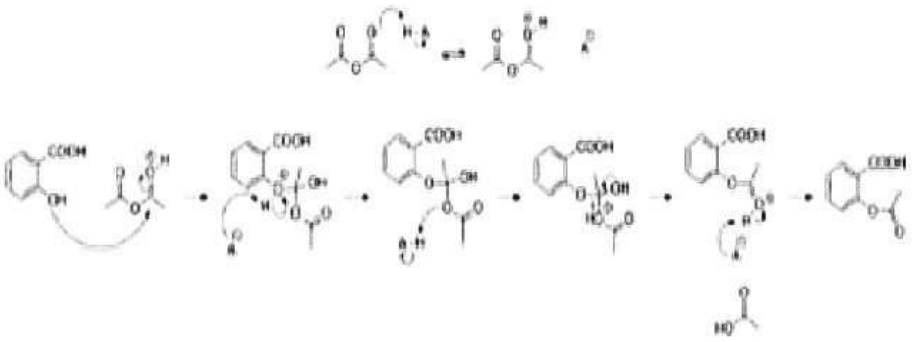
2- The reaction: -



Salicylic acid	Acetic anhydride	Acetylsalicylic acid	Acetic Acid
($C_7H_6O_3$)	($C_4H_6O_3$)	($C_9H_8O_4$)	($C_2H_4O_2$)

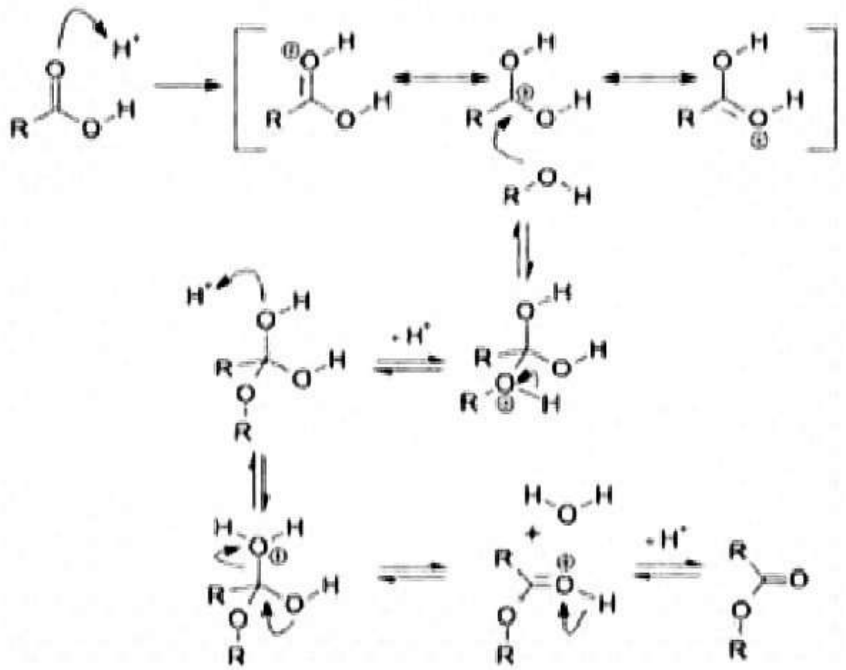
3- The mechanism: -

4- The main different of esterification of alcohol and of phenols that alcohols can reacted



with carboxylic acids, but phenols can't have reacted with carboxylic acids.

5- To complete esterification reaction, we must add strong acidic solution like phosphoric acid. Alcohols can react with this acid because alcohols are proton acceptor unlikely the phenols which can't react with this acid because phenols can't accept any protons.



Results

1- Steps to get pure product: -

By using 5 mg of crude acetylsalicylic into TLC analysis The aspirin sample will be added to a 125-ml flask. About 60 mL of hot ethanol/water solvent will be added slowly to the aspirin sample in a water bath. Then the crystals will be dissolved, then we must be cooling the flask to have the same temperature of the room for ten minutes, it will be fully crystallizing. Then, the crystals were placed into a vacuum filter where they Were subsequently rinsed with two 3 mL portions of cold deionized water and one 2 mL port of cold ethanol.

2- Two different techniques: -

chromatographic or spectrophotometric methods and titration analysis.

Titration analysis: -

- Weight accuracy must be between 0.1 and 0.15 g of the product of aspirin into a flask.

-Then by adding ethanol and swirl to dissolve. By adding two drops of phenolphthalein indicator to the flask.

-by using 0.1 M of NaOH.

Thin layer chromatography: -

chromatography in which a liquid sample moves by capillarity into a solid adsorbent medium like alumina or silica gel which is arranged as a thin layer on a glass plate.

AIM OF PROJECT

THE EXPERIMENT SEEKS TO SYNTHESIZE AND PURIFY ASPIRIN FROM A REACTION OF SALICYLIC ACID AND ACETYL CHLORIDE

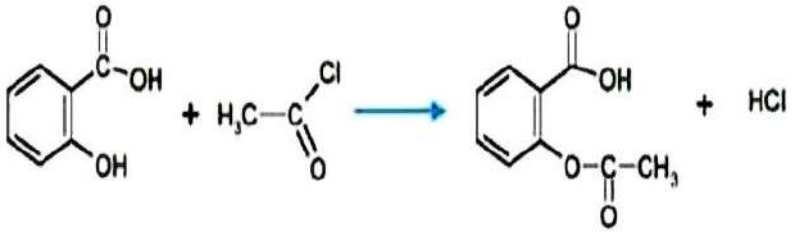
THEORY

Aspirin is both an organic ester and an organic acid. Aspirin is a weak monoprotic acid. It is used extensively in medicine as a pain killer (analgesic) and as a fever-reducing drug (antipyretic). When ingested, acetylsalicylic acid remains intact in the acidic stomach, but in the basic medium of the upper intestinal tract, it hydrolyzes forming the salicylate and acetate ions.

Aspirin (molar mass of 180.2 g/mol) is prepared by reacting salicylic acid (molar mass of 138.1 g/mol) with acetyl chloride (molar mass of 102.1 g/mol) in the presence of pyridine.

The Chemical Reaction is as follows:

$$HOC_6H_4COOH + CH_3COCl \longrightarrow CH_3COOC_6H_4COOH + HCl$$



salicylic acid	acetyl chloride	Aspirin (acetylsalicylic acid)	hydrochloric acid
$C_7H_6O_3$	CH_3COCl	$C_9H_8O_4$	HCl

APPARATUS

CHEMICALS REQUIRED

- Salicylic Acid - 10 g
- Pyridine - 7 ml
- Acetyl Chloride - 7.5 ml
- Acetic Acid
- Conc. Hydrochloric Acid

LABORATORY EQUIPMENTS REQUIRED

- Analytical Balance
- Erlenmeyer Flask (100 ml, Conical Flask)
- Graduated Cylinder
- Dropper
- Cold Distilled Water
- Beaker
- Water Bath
- Clamp (To hold the Erlenmeyer Flask)
- Funnel
- Filter Paper
- Watch Glass
- Glass Rod
- Bunsen Burner

SAFETY PRECAUTIONS

SAFETY APPARATUS

- Laboratory Coat
- Hand Gloves
- Safety Goggles
- Face Mask
- Vaseline(To prevent burning sensation in case of fallacies)

SAFETY MEASURES

- Salicylic Acid may irritate the skin in high concentrations. Take appropriate care to avoid contact.
- Acetyl chloride has irritating vapours and smell. Avoid inhaling them. Transfer acetyl chloride drop wise to the graduated cylinder.
- Handle all hot equipments with caution and never leave the Bunsen burner flame unattended.
- The hot beakers and flasks must be handled with care and should only be moved using tongs.
- The aspirin is not pure enough for practical use as a drug. It is used only for investigatory purposes.
- Perform the experiment in an open laboratory. Do not attempt the project in a closed space. Always keep wearing your mask while performing the experiment.

PROCEDURE

1. Obtain a 100 mL Erlenmeyer flask from the supply area. If the Erlenmeyer flask contains water droplets, heat it on a Bunsen burner to remove the moisture.

2. Weigh about 10 grams of salicylic acid into the Erlenmeyer flask using an analytical balance. Do not add lumps of salicylic acid.

3. Measure about 7.0 ml of pyridine in a graduating cylinder then pour this into the flask with the salicylic acid. Carefully pour pyridine from the cylinder to the flask drop-wise. Constantly swirl the contents of the flask using glass rod gently to mix them. The solid may not all dissolve (If lumps were taken). Do this part in an open laboratory or near a window and keep it away from your face.

4. Measure about 7.5 ml of acetyl chloride in a graduating cylinder and then carefully pour this into the flask with salicylic acid drop-wise. Constantly stir the flask while adding acetyl chloride. Due to the exothermic nature of the reaction, the flask would become hot at the bottom.

5. Cool the hot flask in distil water ice bath for a few minutes. The content of the flask would become semi-solid (Jelly like) after cooling.

6. Set up a Bunsen burner and ring stand. Use a 250 mL beaker to make a water bath. Clamp the Erlenmeyer flask in the water bath. Heat the water bath to about 75°C. Maintain this temperature for 5-15 minutes. Move the burner away from the bath when the water gets too hot. Remove the burner when the semi-solid has been converted to liquid again.

7. At the end of 5-15 minutes, the salicylic acid should all have dissolved and been converted to acetylsalicylic acid. Remove the burner, and cautiously pour the solution in a thin stream into about 300 ml of cold distil water ice bath, stirring the mixture meanwhile with glass rod. The acetylsalicylic acid solidifies at once. Wait till no more crystals are formed.

8. After cooling, setup a funnel with a filter paper in it. Put this funnel into a beaker or a flask. Now filter the mixture and collect the solid crystal residue in a watch glass.

9. Clean and rinse the mixture with acetic acid to purify it. Take it in a watch glass and let the excess water evaporate. Measure the weight of aspirin formed. Collect the sample in a vial or poly zip.

REPORT

OBSERVATION

The acetylsalicylic acid formed has the following physical properties

STATE: Crystalline Solid

COLOUR: Colour is white to very lightly pink.

TEXTURE: The texture is brittle (powder like).

SMELL: The smell is similar to that of vinegar.

WEIGHT OF ASPIRIN FORMED:

CALCULATIONS

The limiting reagent here is salicylic acid, hence yield should be calculated from its amount taken.

Molecular Formula of Salicylic Acid: $C_7H_6O_3$

Molecular Formula of Acetyl Salicylic Acid: $C_9H_8O_4$

Molecular Weight of Salicylic Acid: 138 g/mol

Molecular Formula of Acetyl Salicylic Acid: 180 g/mol

Theoretical Yield:

138 g of Salicylic Acid gives 180 g of Aspirin

Therefore, 10 g of Salicylic Acid will give X g of Aspirin

$$X = \frac{10 \times 180}{138} = 13.04 \text{ g}$$

$$\text{Percentage Yield} = \frac{\text{Practical Yield}}{\text{Theoretical Yield}} \times 100 =$$

PHOTOGRAPHS & SAMPLES

Addition of Pyridine

Swirling the mixture

Addition of Acetyl Chloride

Heating in Water Bath

Stirring for Crystallisation

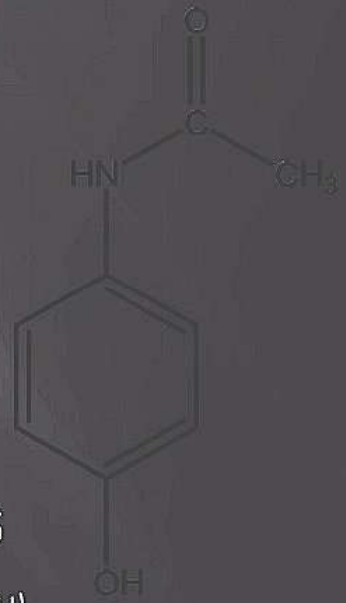
Aspirin Sample

Aspirin Sample

PREPARATION OF PARACETAMOL (P-ACETAMIDO PHENOL)

M.wt=151.2(gm/mole)

Acetaminophen is a P- acetamido phenol or it is N-acetyl P-aminophenol or 4-hydroxy acetanilide.



Physical properties:

Odorless , white crystals with bitter taste.

M.pt. = 169-172 C0

Solubility: one part(slightly soluble in water and ether) in 70 parts of water and in 7 parts Of alcohol ,soluble in alkali solution(like NaOH), soluble in boiling water(1:20)

Acetylation methods:

Introduction

The replacement of '*active hydrogen*' of compounds belonging to the class ROH (phenols or alcohols), in addition to compounds of the category RNH_2 and R_2NH (*i.e., primary-* and *secondary*-amines may be acetylated directly, whereby the reactive H-atom is specifically replaced by the **acetyl radical "acetylation"**

And may be it done by acylation

Also by esterification process

Preparation of paracetamol

- ***Action and uses:*** it has analgesic and antipyretic actions but has no anti-inflammatory properties.
- ***Side effects:*** like that of acetanilide, affect heart and may cause skin reaction and a jaundice condition (they occur less frequently and less severity) .in doses used for analgesia ,it is relatively safe drug.
- ***Preparation:***It may prepared by reduction of P-nitrophenol in glacial acetic acid . acetylation of P-nitrophenol by using acetic anhydride.

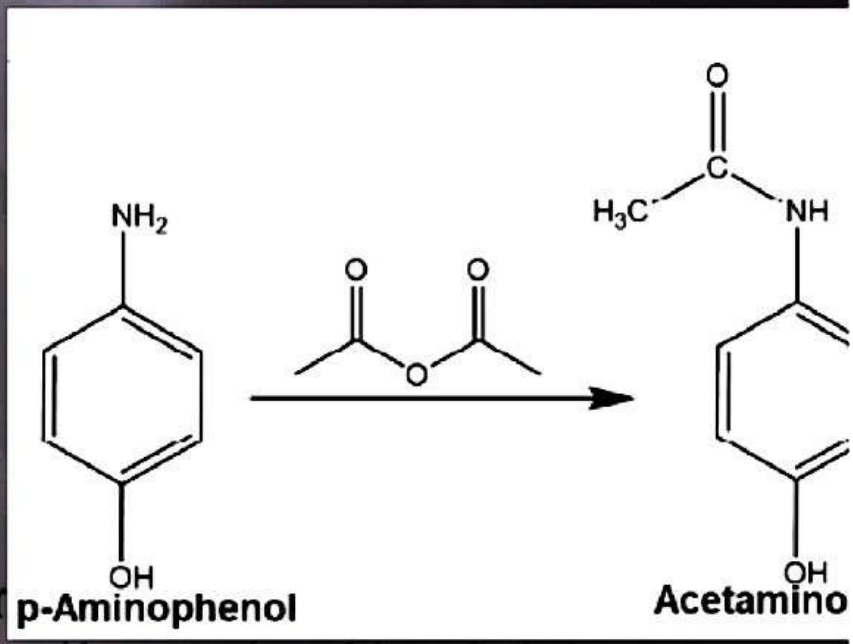
Reactivity towards acetylation:

Acetyl chloride > acetic anhydride > acetic acid

The best one: acetic anhydride.

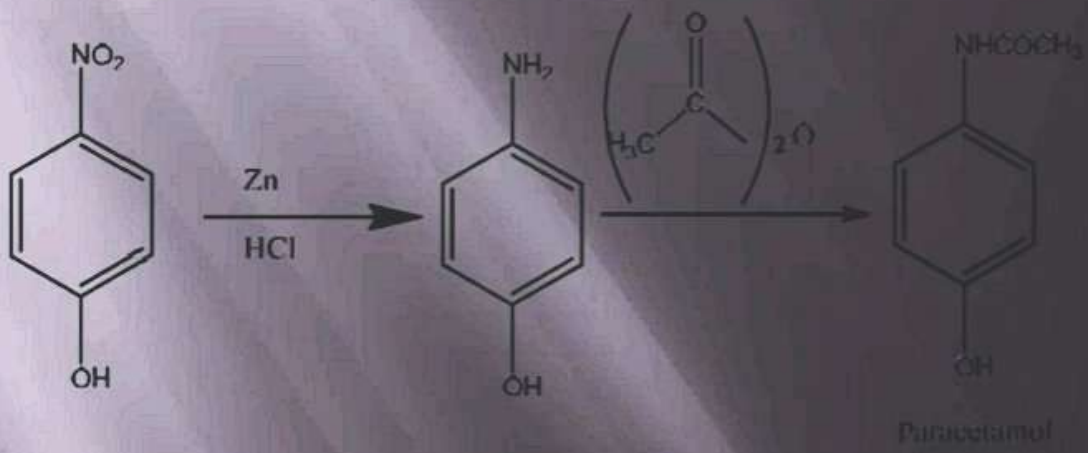
Easily handled, safe and reaction can easily be controlled.

MAIN REACTION OF PARACETAMOL:

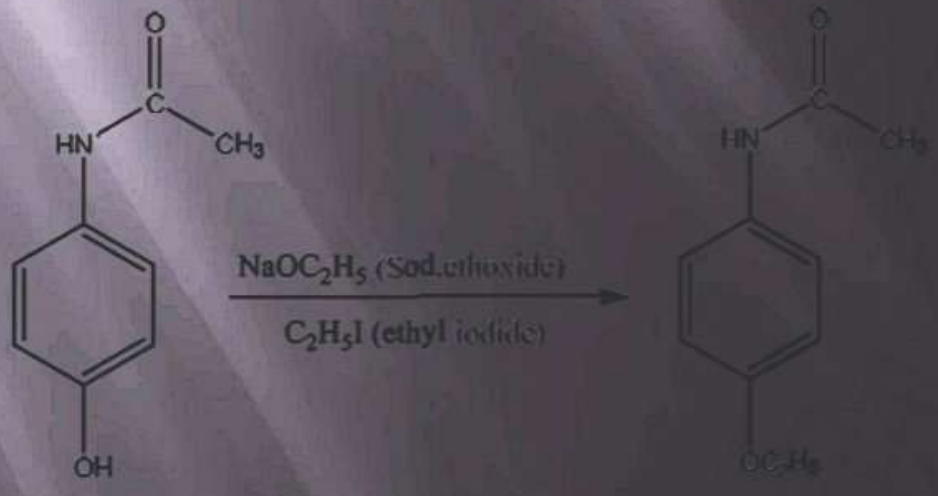


- Their character
anhydride reacts with compound containing active hydrogen atom to form derivatives containing acetyl group

Preparation of paracetamol

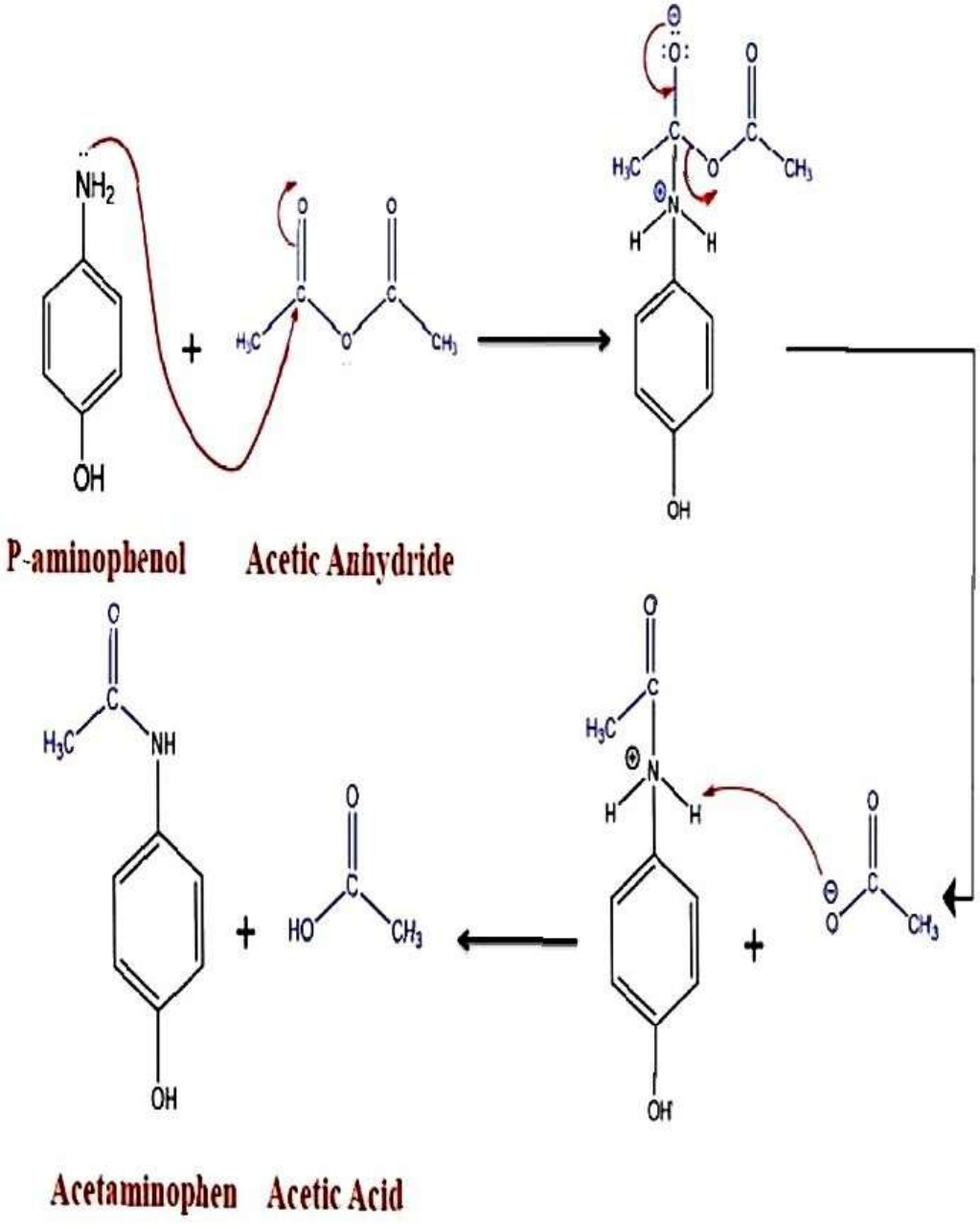


Paracetamol



Sod.ethoxide

Main Mechanism of Preparation of paracetamol



Preparation of paracetamol

- ***Physical properties of phenacitin:*** stable ,white ,glistening crystals or powder.it is odorless and has a slightly bitter taste.
- ***Solubility:*** Very slightly soluble in H2O , soluble in alcohol and chloroform but slightly soluble in ether .it is sparingly soluble in boiling H2O it is a neutral compound and will not dissolve in either acids or alkalis.
- ***Action and uses:*** it is used widely as an analgesic and antipyretic. the toxic effects are the same as that of acetaminophen (the active form of phenacetin in that it is converted in the body to paracetamol)
- ***Toxicity:*** phenacetin may damage the kidneys when used in large dose or for long period of time.

PRECAUTIONS:

(1) ALL GLASS APPARATUS WHICH ARE USED IN THE SYNTHESIS MUST BE PERFECTLY DRY.

(2) CONCENTRATED SULPHURIC ACID SHOULD ALWAYS BE ADDED WITH GREAT CAUTION.

(3) TO COMPLETE THE REACTION MIXTURE IT MUST BE WARMED AT 60°C FOR 20-25 MINUTES.

Recrystallization:

Dissolve the crude product in 70% (*v/v*) ethanol and warm it to 60°C ; add 2 g of powdered animal charcoal (decolorizing carbon). Filter and concentrate the filtrate over a water-bath. Allow it to cool and large monoclinic crystals will separate out.

The yield of the pure paracetamol (mp 169–170.5°C) is 6.5 g.

PROCEDURE:

1) IN A ROUND-BOTTOMED FLASK (100 ML) PLACE 1.375 G OF P-AMINOPHENOL, AND THEN ADD 3.75 ML OF DISTILLED WATER.

2) TO THIS MIXTURE, DROP CAREFULLY 1.5 ML OF ACETIC ANHYDRIDE. ADJUST THE LIEBIG CONDENSER AND HEAT UNDER REFLUX FOR 20 MINUTES AT (115-120 C)

3) AFTER THE SUBSTRATE HAS DISSOLVED, COOL DOWN THE SOLUTION BY PLACING THE ROUND-BOTTOMED FLASK IN AN ICE-BATH FOR FEW MINUTES, THEN IN THE FREEZER FOR 10-15 MINUTES, AND THE CRYSTALS OF PRODUCT SHOULD APPEAR IN THE FLASK.

4) FILTER THE PRODUCT ON THE BÜCHNER FUNNEL AND WASH WITH COLD WATER. DRY ON AIR ON PETRI DISH.

Calculations:

Theoretical yield/Practical yield

Wight of *p*-Aminophenol on acetylation with Volume of acetic anhydride yields Paracetamol = Wight g

Hence, Theoretical yield of Paracetamol = g

Reported Practical yield = g

Therefore, Percentage Practical yield = Practical yield Theoretical yield 100 =

Antibacterial and Antifungal activity of Mango (*Mangifera indica*) based Copper oxide nanoparticles

An internship report submitted in accordance with the requirement for thedegree of B.Sc.

Submitted by

NAKKA HEPSIBARANI

Roll No. 213117121276

Group: C.BC.BT LIFE SCIENCES

VISHNU
UNIVERSAL LEARNING

UNDER THE GUIDANCE OF

Director

Bio Enviro Chemical Solutions

(An ISO 9001 Certified R&D Laboratory)

Visakhapatnam-530017

BECS

B.V. RAJU COLLEGE

VISHNUPUR, BHIMAVARAM-534202

DEPARTMENT OF LIFESCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled **Antibacterial and Antifungal activity of Mango (Mangiferaindica) based Copper oxide nanoparticles** is a bonafide work done by **N.HepsibaRani** .with Reg. Number **213117121276** . submitted in partial fulfilment of the work for the Degree of Bachelor Science (**IC-btbc**) in B.V. Raju College, Vishnupur, Bhimavaram during the academic year 2021-2024.

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This is to certify that Ms. NAKKA HEPSIBA RANI, Regd. No. 213117121276 of Department of Life sciences, B.V.Raju College, Bhimavaram, underwent project entitled "IN-VITRO ANALYSIS OF MANGIFERA INDICA PLANT BASED COPPER NANOPARTICLES AS ANTIMICROBIAL AND ANTIOXIDANT AGENTS " at Bio Enviro Chemical Solutions, Palkol from 15-02-2024 to 15-05-2024.

The overall performance of the internship during her dissertation is found to be Satisfactory

Project in-charge

Bio Enviro Chemical Solutions * BECS * Visakhapatnam

Director
DIRECTOR
BIO ENVIRO CHEMICAL SOLUTIONS
8-6-14, Chinna Waltair
Visakhapatnam-530017, India

Date: 27-05-24

Place: Visakhapatnam

AN INTERNSHIP PROJECT ON

INDUSTRIAL TRAINING IN QUALITY CONTROL - MICROBIOLOGY

BACHELOR OF SCIENCE [B.SC.]

SUBMITTED BY

CH. NAGA ALEKHYA

REG.NO:213117121275

BT BC C

UNDER THE GUIDANCE OF

DR. MYTHRI MSc. PHD

ANVSR ANJANEYULU

AUROBINDO PHARMA LTD UNIT: 3

BACHUPALLY, BACHUPALLY (MANDAL), MEDCHAL –

MALKAJGIRI DISTRICT. TELANGANA STATE

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DEPARTMENT OF LIFE SCIENCES

CERTIFICATE

This is to certify that this Internship project work is entitled 'INDUSTRIAL TRANING IN QUALITY CONTROL IN MICROBIOLOGY is a bonafide work done by CH.NAGA ALEKHYA With Reg. number 213117121275 submitted in partial fulfillment of the work for the Degree of Bachelor Science (BTBCC) in B.V.Raju college, vishnupur, Bhimavaram during the academic year 2021-2024.

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EXAMINERS:

EXTERNAL:

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AUROBINDO

16th Apr 2024

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Ch. NAGA ALEKHYA, Reg No: 213117121275 -B.Sc.-Biotechnology - B V Raju College-VISHNUPUR-BHIMAVARAM, A.P-534202.** has undergone Industrial Training in **Quality Control-Microbiology** Department **Unit-III** in our organization from **15-Mar-2024 to 15-Apr-2024.**

During this period, we found her to be hard working and committed and we wish her all the best in her future endeavors.

With Best Wishes.

For Aurobindo Pharma Limited

ANVSR Anjaneyulu
Assistant Manager-HR

AUROBINDO PHARMA LIMITED
UNIT-III