



Sl.No./DN/1/Micro/SMKV/2025

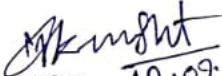
Jagdalpur, Date- 12.02.2025

NOTICE

To all Postgraduate Second Semester Microbiology Students, It is hereby informed that the assignment topics for all students have been finalized and are being sent to you. You are required to complete the assignments and submit them to your respective faculty members in the department by **31st March 2025** without fail.

Please ensure that you complete and submit your assignments within the given deadline.

Thank you.


(HOD) 12.02.2025

Department of Microbiology
Shaheed Mahendra Karma University, Bastar

Assignment Topic (2nd Semester M.Sc. Microbiology : 2024-25)

S.No.	Name	MBSE-12T (Biosafety & Intellectual Property Right)	MBSE-11T (Metagenomics, Basic Computer & Bioinformatics)	Lab-II
1.	Aashvi Mishra	Introduction to Biosafety: Importance in Biotechnology	Introduction to Metagenomics: History and Development	PCR amplification of metagenomics DNA
2.	Aastha Mishra	Biosafety Cabinets: Types and Their Applications	Metagenomics Approaches for Studying Bacterial Diversity	
3.	Bharti Netam	Biosafety Levels of Specific Microorganisms	Gene Prospecting in Metagenomics for Biotechnological Applications	
4.	Bhumika Sen	Guidelines for Using Radioisotopes in Laboratories	Viral Metagenome: Concepts and Importance	Creation of different formats on MS Word
5.	Chandrika	AERB/RSD/RES Guidelines for Biosafety	Meta-transcriptomics: Applications in Microbial Studies	
6.	Damini Dewangan	National and International Biosafety Regulations	Metaproteomics and Metabolomics in Metagenomic Research	
7.	Devendra Baghel	GMOs/LMOs: Concerns, Challenges, and Regulations	Microbiomes: Role of Microbial Communities in Health and Environment	Construction of Bar Chart using MS Excel.
8.	Dhanraj	Role of Institutional Biosafety Committees (IBSC, RCGM, GEAC)	VBNC (Viable but Not Culturable) Bacteria: Importance and Challenges	
9.	Diksha Sahu	Applications of Biosafety in Food and Agriculture	Modern Techniques for Rapid Microbial Identification (PCR, Mass Spectrometry, Fluorescence Techniques)	
10.	Gayatri Sethiya	Environmental Release of GMOs: Risks and Precautions	CRISPR-Cas System: Mechanism and Applications	Formation of a Power Point Presentation.
11.	Jayanti Kashyap	Risk Analysis, Risk Assessment, and Risk Management in Biosafety	Molecular Basis of Host-Microbe Interactions: An Overview	
12.	Kamini	Communication Strategies in Biosafety	Hypersensitive Response (HR) to Plant Pathogens: Mechanism and Impact	
13.	Kavya Valva	Introduction to Intellectual Property Rights (IPR)	Type Three Secretion System (TTSS) in Plant and Animal Pathogens	Introduction to bioinformatics databases: NCBI/PDB/DDBJ, Uniprot, PDB
14.	Keshav Prasad Salame	Types of Intellectual Property: Patents, Trademarks, Copyrights	Basics of Computer Organization and Generations of Computers	
15.	Khageshwari Mourya	Industrial Design and Related Rights	Computer Hardware and Software: Fundamental Concepts	

16.	Khushboo Kushwaha	Traditional Knowledge and Geographical Indications in IPR	Basics of Operating Systems (Windows, Unix)	Demonstration of Sequence retrieval using BLAST
17.	Megha Shivprakash	Importance of Intellectual Property Rights in Biotechnology	Classification of Computers and Computer Languages	
18.	N Utkarsha	Patentable and Non-Patentable Inventions	MS Office: Applications in Scientific Research	
19.	Parvati Mourya	Patenting Life: Ethical and Legal Considerations	Introduction to Internet and Web Technologies	Study the antibacterial and antifungal effect of some plant extracts/ Experiment natural products
20.	Payal Jurri	Legal Protection of Biotechnological Inventions	Importance and Requirements of Internet in Research	
21.	Pitamber Baghel	Role of World Intellectual Property Rights Organization (WIPO)	Electronic Mailing and Chatting: Communication in the Digital Era	
22.	Radhika	Plagiarism: Types, Consequences, and Academic Punishments	Search Engines and Webpages: Role in Academic Research	Find the minimum inhibitory concentration of a given antibiotic.
23.	Riya Jain	Types of Patent Applications: Ordinary, PCT, Divisional, and Addition	Concept of Bioinformatics: Aim and Branches	
24.	Rutina Shrivastav	Introduction to Patent Filing Procedures	Applications of Bioinformatics in Biological Research	
25.	Sandhya Markam	Patent Licensing and Agreements	Basic Biomolecular Concepts: Proteins, Amino Acids, DNA, and RNA Sequences	Sterility testing of pharmaceutical products- Injectables eye and eardrops.
26.	Sanskriti Todem	Rights and Duties of a Patent Owner	Bioinformatics Resources: NCBI, EBI, ExPASy, RCSB, DDBJ	
27.	Santoshi Dugga	Indian Patent Act 1970 and Recent Amendments	Open-Access Bibliographic Resources and Databases: PubMed, BioMed Central, PLoS, CiteXplore	

(Guest Lecturer)
Dr. Krishna Kumar Verma
Shaheed Mahendra Karma University, Bastar

(HOD)
Department of Microbiology
Shaheed Mahendra Karma University, Bastar

MSc Microbiology Semester Second(Session 2025-2026)

Assignment topic- Theory and Practical

S. No	Student name	Paper 1 (MBSC-08T)	Paper 2 (MBSE-09T)	Paper 3 (MBSE-10T)	PRACTICAL (Lab Course -I)
1	Aastha Mishra	Solid waste management	Gastroenteritis caused by E. Coli.	Microbial spoilage of pharmaceutical products.	Assessment of microbiological quality of water by presumptive test /MPN test.
2	Aashvi Mishra	Terrestrial environment: soil profile and soil microflora.	Dermatophytes	Testing of pharmaceutical products.	Analysis of soil for pH, moisture content.
3	Bharati Netam	Aquatic environment: Microflora of fresh and marine habitats.	Amoebic dysentery	Types of vaccine.	Isolation of microbes (bacteria and fungi) from rhizosphere and rhizoplane.
4	Bhumika Sen	Air atmosphere: Aeromicroflora and dispersal of microbes.	Malatia	Mode of action of quinolone.	Confirmed and complete tests for faecal coliform.
5	Damini Dewangan	Animal environment: microbes in our body(microbiomics) and animal(ruminants).	Gastroenteritis caused by E. Coli.	Application of biosensors in pharmaceuticals	Determination of BOD of waste water sample.
6	Devendra Baghel	Solid waste management	Cholera and typhoid	Mode of action of antibiotic and its use and limitation.	Study of biological interaction.
7	Dhanraj	Phosphorus cycle	Classification of clinical disease.	Relational drugs designing..	Study the effect of salt concentration, pH on growth of microbes.
8	Diksha Sahu	Phosphorus cycle	Hepatitis and Rabies.	Bacterial resistance to antibiotic and resistance barrier.	Isolation and observation of fungal pathogen using lactophenol cotton blue stain.
9	Chandrika	Biocontrol agent: microbes - plant interaction root arial pkant surfaces.	Collection of clinical sample and laboratory diagnose.	Important of charak in indian traditional knowledge.	Isolation and identification of pathogen from clinical sample:E.coli, streptococcus spp.
10	Gayatri Sethiya	Carbon cycle	COVID	Carcinogenic test	Isolation and identify of pathogen:Salmonella spp. And



					<i>pseudomonas spp.</i>
11	Jayanti Kashyap	Sulphur cycle	HIV and Polio	Action of different antibiotics on cell wall.	Study of biological interaction.
12	Kamini	Ecosystem: roll of microbes in ecosystem.	Laboratory diagnose of clinical disease.	Lal test and preservative efficacy test.	Study of growth characters of isolated pathogen on following media:EMB, TSI AGAR
13	Kavya Valva	Microbial Degradation.	Dengu and Ebolla	Vaccine and thier type.	Isolation and observation of fungal pathogen using lactophenol cottan blue stain.
14	Khageshwari Mourya	Liquid waste management.	Tuberculosis and syphilis	Carcinogenic test and Antibiotic assay.	Assessment of microbiological quality of water by presumptive test /MPN test.
15	Khushboo kushwaha	Nitrogen cycle	COVID	Antimicrobial chemotherapy.	Confirmd and complete tests for faecal coliform
16	Keshav Salame	Liquid waste management	Basic concepts of clinical microbiology	Financing R and D capital and market outlook, IP, BP, USP, FAD perspective.	Isolation of microbes (bacteria and fungi) from rhizosphere and rhizoplane.
17	Megha Shivprakash	Nitrogen cycle	Chain of infection-portal of entry and exit of pathogen.	Edible vaccine and protien subunit vaccine.	Study of growth characters of isolated pathogen on following media:Ptoeus spp. , TSI AGAR
18	N Utkarsha	Microbial interaction	Dermatophytes	DNA vaccine and synthetic peptide vaccine.	Study tje effect of salt concentration, pH on growth of microbes.
19	Parvati Mourya	Microbial interaction	Malaria	Hormone-Insulin	Isolation of nodulesrhizobium from root .
20	Payal Jurri	Sulphur cycle	Amoebic dysentry	Pyrogen testing and IPT.	Confirmd and complete tests for faecal coliform
21	Pitamber Baghel	Microbial Degradation of cellulose, lignin, hemicellulose and chitin.	Hepatitis and rabies.	Rational drug designing and macro-molecular, cellular, synthetic drugs carrier.	Determination of BOD of waste water sample
22	Rutina Shrivastav	Microbial interaction	Dengu and ebolla	Action of different antibiotic on cell wall.	Isolation of nodulesrhizobium from root .
23	Radhika	Solid waste management	Tetanus and polio	Bacterial resistance to antibiotics and resistance barrier.	Assessment of microbiological quality of water by presumptive test /MPN test.
24	Riya jain	Liquid waste management	Cholera and malaria	Microbial contamination of pharmaceutical products and their presevation.	Isolation of microbes (bacteria and fungi) from rhizosphere and rhizoplane.



25	<i>Sandhya Markam</i>	<i>Aquatic environment</i>	<i>Typhoid and desentry.</i>	<i>History and principle of Indian traditional medicine.</i>	<i>Determination of BOD of waste water sample</i>
26	<i>Sanskriti Todem</i>	<i>Microbial Degradation of cellulose, hemicellulose, lignin and chitin.</i>	<i>Hepatitis and AIDS</i>	<i>Endotoxin(LAL) test.</i>	<i>Study tje effect of salt concentration, pH on growth of microbes.</i>
27	<i>Santoshi Dugga</i>	<i>Aeromicroflora</i>	<i>AIDS and ebolla.</i>	<i>Harmone-Insulin</i>	<i>Isolation and observation of fungal pathogen using lactophenol cottan blue stain.</i>

