CBCS SCHEME

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BBT304

Third Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Microbiology

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Enumerate the differences between Prokaryotes and Eukaryotes citing relevant examples.	10	L2	CO1
	b.	Summarize the notable contributions of five researchers in the golden age of microbiology.	10	L2	CO1
		OR			
Q.2	a.	With a neat labeled diagram, explain the ultra structure of Bacterial cell. Add a note on conjugation in Bacteria.	10	L2	CO1
	b.	Give an account of the general features of Spirochetes and Actinomycetes.	10	L2	CO1
		Module – 2			
Q.3	a.	With the help of a ray diagram, explain the working principle, application and limitations of Phase Contrast Microscope.	10	L2	CO2
	b.	Discuss the techniques that best suits for isolating pure culture of Bacteria.	10	L2	CO2
		OR			
Q.4	a.	What is Micrometry? Explain the principle and technique involved in determining size of a cell.	10	L2	CO2
	b.	Distinguish between Gram staining and Acid Fast staining. Add a note on its application.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain the Bacterial growth curve. Derive a Mathematical equation for generation time of bacteria.	10	L2	CO3
	b.	Explain in detail about EMP and HMP Pathway. Add a note on its significance.	10	L2	CO3
		OR			
Q.6	a.	Elaborate on Primary and Secondary Metabolites production in microbes with examples.	10	L2	CO3
	b.	Define Sterilization. In detail, explain Moist heat sterilization.	10	L2	CO3

		Module – 4			
Q.7	**a.**	Write a critical note on Covid – 19 and Polio.	**10**	**L1**	**CO4**
	b.	Diagrammatically explain the life cycle of Microbe causing Malaria in India.	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	Summarize the Causative organism symptoms , Route of infection Laboratory diagnosis and treatments for tuberculosis.	**10**	**L2**	**CO4**
	b.	Explain about Microbiome and Gut Health.	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Define Aerobiology. Write a critical note on Air sampling techniques.	**10**	**L2**	**CO5**
	b.	What are Biofertilizers? Explain the process of isolation and mass production of Rhizobium.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain the role of various biogeochemical cycles in environment. Give an detailed account of N_2 cycle.	**10**	**L2**	**CO5**
	b.	Explain the steps in waste water treatment and application of microorganisms.	**10**	**L2**	**CO5**

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