

B.Sc. Semester - 3 (CBCS) Examination
Oct/Nov - 2025 [New Course]
Microbiology-M301(Core)

Time: 2:30 Hours**Marks:70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1(A)	Objective type questions	(04)
	1. What is the primary goal of microbial taxonomy? 2. True or False: Metagenomics allows the study of microorganisms that cannot be cultured. 3. Fill in the blank: The three domains of life are Archaea, Bacteria, and _____. 4. Define phylogeny.	
Que.1(B)	Answer in Brief (any one out of two)	(03)
	1. Explain the importance of microbial diversity in ecosystems. 2. What are the major characteristics used in microbial taxonomy?	
Que.1(C)	Write a Note on (any one out of two)	(07)
	1. Evolution and diversity of microorganisms. 2. Classification systems and taxonomic ranks of microorganisms.	
Que.2(A)	Objective type questions	(04)
	1. Name two differences between Archaea and Eubacteria. 2. True or False: All Gram-negative bacteria are aerobic. 3. Fill in the blank: Phototrophic bacteria obtain energy from _____. 4. What is a facultative anaerobe?	
Que.2(B)	Answer in Brief (any one out of two)	(03)
	1. Explain the characteristics of aerobic/microaerophilic motile, helical vibroid bacteria. 2. Describe the general features of dissimilatory sulfate reducers.	
Que.2(C)	Write a Note on (any one out of two)	(07)
	1. General features of Gram-positive bacteria. 2. Characteristics and significance of extremophiles	
Que.3(A)	Objective type questions	(04)
	1. What are the key features of algal reproduction? 2. True or False: Algae are only found in freshwater environments. 3. Fill in the blank: Protozoa are classified based on their mode of _____. 4. Name two spores produced by fungi.	
Que.3(B)	Answer in Brief (any one out of two)	(03)
	1. Explain the ultra-structure of protozoa. 2. Describe the classification of fungi.	
Que.3(C)	Write a Note on (any one out of two)	(07)
	1. General characteristics and economic importance of fungi. 2. Occurrence, structure, and economic significance of algae.	
Que.4(A)	Objective type questions	(04)
	1. What is the difference between lytic and lysogenic cycles in bacterial viruses? 2. True or False: Animal viruses can cause cytotoxic effects. 3. Fill in the blank: Viroids differ from viruses in that they lack a _____. 4. Define : Prion	

- Que.4(B) Answer in Brief (any one out of two) (03)
1. Explain the structure of the Tobacco Mosaic Virus (TMV).
 2. Describe the cultivation methods of viruses.
- Que.4(C) Write a Note on (any one out of two) (07)
1. Replication of Lytic bacterial viruses.
 2. Explain the role of bacterial viruses in cancer.
- Que.5(A) Objective type questions (04)
1. What is biomagnification?
 2. True or False: Microbial air pollution is a significant public health concern.
 3. Fill in the blank: Biofuels are derived from _____ materials.
 4. Define bioplastics.
- Que.5(B) Answer in Brief (any one out of two) (03)
1. Explain the process of microbial enhanced oil recovery.
 2. Describe the methods used to control biodeterioration of metals.
- Que.5(C) Write a Note on (any one out of two) (07)
1. Significance of bioremediation in environmental management.
 2. Industrial applications and environmental benefits of bioleaching.
