

B.Sc. Semester - 3 (CBCS) Examination
Oct/Nov - 2024 (As Per Syllabus Year June-2017)
MICRO-BIOLOGY (CORE)

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

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

-
- Que.1(A) Answer the following (any one out of two) (07)
1. Discuss the role of microbial evolution in microbial diversity.
 2. Explain the major characteristics used in the taxonomy of microorganisms.
- Que.1(B) Attempt any one (out of two) (04)
1. Importance of metagenomics in studying microbial diversity.
 2. Outline the taxonomic ranks of microorganisms with examples.
- Que.1(C) Attempt any three (out of five) (03)
1. Define : biodiversity.
 2. What is phylogeny?
 3. List two key features of prokaryotic phylogeny.
 4. Fill in the blank: _____ is the study of genetic material recovered directly from environmental samples.
 5. True or False: Microbial taxonomy does not consider genetic characteristics.
- Que.2(A) Answer the following (any one out of two) (07)
1. Compare and contrast Archaea and Eubacteria.
 2. Explain the general features of Gram-negative aerobic motile bacteria.
- Que.2(B) Attempt any one (out of two) (04)
1. Characteristics of phototrophic bacteria.
 2. A brief note on Extremophiles.
- Que.2(C) Attempt any three (out of five) (03)
1. Name one dissimilatory sulfate reducer.
 2. Define : facultative anaerobes.
 3. True or False: Mycobacteria are Gram-positive bacteria.
 4. Fill in the blank: _____ bacteria are known for their ability to survive extreme conditions.
 5. Give one example of an anaerobic cocci organisms.
- Que.3(A) Answer the following (any one out of two) (07)
1. Describe the structure and reproduction of Protozoa.
 2. Explain the reproductive structures found in fungi.
- Que.3(B) Attempt any one (out of two) (04)
1. Classification of fungi and their major divisions.
 2. Discuss the economic importance of algae.
- Que.3(C) Attempt any three (out of five) (03)
1. What is a fungi?
 2. Name one economically important product derived from algae.
 3. True or False: Protozoa are prokaryotic organisms.
 4. Fill in the blank: Fungi reproduce through _____.
 5. What is the mode of reproduction in algae?

- Que.4(A) Answer the following (any one out of two) (07)
1. Describe the lytic life cycle of the T4 phage
 2. Discuss the structure and replication of Tobacco Mosaic Virus (TMV)
- Que.4(B) Attempt any one (out of two) (04)
1. Methods to enumerate viruses
 2. Classification of bacterial viruses
- Que.4(C) Attempt any three (out of five) (03)
1. Define: prions.
 2. What is a viroid?
 3. True or False: Animal viruses can cause cytotoxic effects.
 4. Fill in the blank: The lysogenic life cycle is associated with _____ phage.
 5. What is the significance of viral classification?
- Que.5(A) Answer the following (any one out of two) (07)
1. Discuss the processes of biodegradation and bioremediation.
 2. Explain microbial air pollution and methods of air sanitation.
- Que.5(B) Attempt any one (out of two) (04)
1. Describe the process of bioleaching of metals.
 2. Outline the role of microorganisms in the production of biofuels.
- Que.5(C) Attempt any three (out of five) (03)
1. Define biomagnification.
 2. Name one material susceptible to biodeterioration.
 3. True or False: Bioplastics are produced by microbial activity.
 4. Fill in the blank: _____ is a process where microorganisms recover oil from depleted reservoirs.
 5. What is microbial enhanced oil recovery?
