647510 **BSCmicCC1010** **Seat No :_____**

B.Sc. Semester - 1 (*CBCS*) Examination
Oct/Nov-2024 (As Per Syllabus Year June-2018)
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) Objective type questions (04)

1. Define : Microorganisms
2. _____ is known as the Father of Microbiology.
3. Name one application of microbiology in industry.
4. Name two major groups of microorganisms

Que.1(B) Answer in Brief (any one out of two) (03)

1. Describe the role of Louis Pasteur's experiments in microbiology.
2. Describe the role of microorganisms in the environment.

Que.1(C) Write a Note on (any one out of two) (07)

1. Discuss the applied areas of microbiology and their relevance.
2. Describe the general characteristics of bacteria in detail.

Que.2(A) Objective type questions (04)

1. What is the use of condenser in microscope?
2. Name the type of microscopy that uses visible light to observe specimens.
3. Full form of TEM is _____.
4. What is the use of mordant in the staining procedures?

Que.2(B) Answer in Brief (any one out of two) (03)

1. Differentiate between bright field and fluorescent microscopy in brief.
2. What is differential staining method? Discuss with examples.

Que.2(C) Write a Note on (any one out of two) (07)

1. Describe the principle, construction, and working of bright field microscopy in detail.
2. Mention the principle and working of Scanning electron microscopy (SEM).

Que.3(A) Objective type questions (04)

1. *Streptococcus* bacteria is having the cocci shape (True/False).
2. What is the primary function of a bacterial capsule?
3. What is the key difference in the cell walls of Gram-positive and Gram-negative bacteria?
4. Give one example of bacteria producing endospore.

Que.3(B) Answer in Brief (any one out of two) (03)

1. Explain the various functions of the bacterial flagella and pili.
2. Describe the role of the bacterial capsule in brief.

Que.3(C) Write a Note on (any one out of two) (07)

1. Describe the structure of Gram positive bacterial cell wall, including its significance.
2. Explain the formation process of bacterial endospores, and their importance in bacterial survival.

Que.4(A) Objective type questions (04)

1. Name the type of bacteria that can grow in the absence of oxygen.
2. What is the role of carbon in bacterial nutrition?
3. Define: Halophiles
4. What is a selective and differential bacteriological medium?

Que.4(B) Answer in Brief (any one out of two) (03)

1. Explain about the effect of temperature on optimal bacterial growth.
2. Which are the different method to identify the bacterial culture in microbiology?

Que.4(C) Write a Note on (any one out of two) (07)

1. Explain the different nutritional types of bacteria with examples.
2. Discuss the various types of bacteriological media, including examples and their specific uses.

Que.5(A) Objective type questions (04)

1. How the growth rate of bacteria is typically expressed?
2. What is binary fission?
3. Define: Generation time
4. Lag phase of the bacterial growth curve shows a decline in the number of viable cells (true/False).

Que.5(B) Answer in Brief (any one out of two) (03)

1. Discuss the factors that influence the growth rate of bacteria.
2. Explain the differences between synchronous growth and continuous culture of bacteria

Que.5(C) Write a Note on (any one out of two) (07)

1. Describe the bacterial growth curve in detail, including all its phases.
2. Elaborate on the various modes of bacterial cell division and bacterial reproduction.

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