

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 6512 **D** **Your Roll No.....**

Unique Paper Code : 253103

Name of the Course : **B.Sc. (H) Microbiology Part-I**

Name of the Paper : Bacteriology (MIHT-102)

Semester : I

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. (a) Define the following terms (**any seven**) :

- (i) Magnetosomes
- (ii) Synchronous Growth
- (iii) Chemolithotrophs
- (iv) Generation Time
- (v) Lyophilization
- (vi) Disinfection
- (vii) Enriched Media
- (viii) Prosthecate Bacteria
- (ix) Endoflagella (2×7=14)

- (b) Give an example of a differential medium. (1)

2. (a) Discuss the role of nucleic acid hybridization in molecular taxonomy. (4)
- (b) Diagrammatically explain the steps of bacterial endospore formation. (4)
- (c) Discuss the methods of culturing anaerobes. (3)
- (d) Make a well labeled diagram of bacterial flagellum. (4)

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3. Write short notes on **(any five)** :
- (i) Methanogens
 - (ii) Methods of bacterial reproduction
 - (iii) Acid Fast Bacteria
 - (iv) Bacterial Capsule
 - (v) Moist heat sterilization
 - (vi) Green photosynthetic bacteria (3×5=15)
4. (a) Name two diseases caused by spirochaetes. (2)
- (b) Give salient features of *Bifidobacterium*. (3)
- (c) Describe the structure of bacterial nucleoid. (3)
- (d) What is ribotyping ? Explain. (4)
- (e) Write the economic importance of actinomycetes. (3)
5. (a) Give one example of each **(any ten)** :
- (i) Gram positive bacteria
 - (ii) Capsulated bacteria
 - (iii) Enrichment medium
 - (iv) Comma shaped bacterium
 - (v) Purple sulphur bacteria
 - (vi) Halophilic archaeobacteria
 - (vii) Symbiotic nitrogen fixer
 - (viii) Cell wall less bacteria
 - (ix) Gliding bacteria
 - (x) Radiation resistant bacteria
 - (xi) Parasitic bacteria (1×10=10)
- (b) Discuss different phases of growth as seen in bacterial batch culture. (5)
6. (a) Comment on the bacteriological filters used for sterilization. (4)
- (b) Describe the structure of peptidoglycan in bacteria and name two agents which degrade or inhibit its synthesis. (4+2=6)
- (c) Tabulate the differences between archaeobacteria and eubacteria. (5)
- (200)