

This question paper contains 4 printed pages]

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S. No. of Question Paper : 982

Unique Paper Code : 253103

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Name of the Paper : Bacteriology (MIHT-102)

Name of the Course : B.Sc. (Hons.) Microbiology

Semester : I

Duration : 3 Hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

Attempt any *five* questions.

*All* questions carry equal marks.

1. (a) Explain the structure of bacterial cell wall, with the help of a suitable diagram. 5
- (b) Explain the following terms (any *five*) :
- (i) Sphaeroplast
  - (ii) Complex medium
  - (iii) Systematics
  - (iv) Glycocalyx
  - (v) Inclusion bodies
  - (vi) Ribosome.
- 2×5=10

P.T.O.

2. (a) Differentiate between the following terms (any *three*) :
- (i) Synthetic and complex medium
  - (ii) *Mycoplasma* and *Mycobacterium*
  - (iii) Mesosome and Plasmid
  - (iv) Peptidoglycan and Pseudomurein. 3×3=9
- (b) How is FAME analysis used as a tool in classifying bacteria ? 4
- (c) What are methanogens ? 2
3. (a) Define the following terms (any *five*) :
- (i) Autoclaving
  - (ii) Taxon
  - (iii) Endoflagella
  - (iv) Desiccation
  - (v) Phototroph
  - (vi) Aerobe
  - (vii) Prostheca
  - (viii) Thermophile. 2×5=10
- (b) Diagrammatically explain the process of endospore formation in a bacterial cell. 5

4. (a) Comment on the economic importance of the following (any *two*) :
- (i) *Lactobacillus*
  - (ii) *Rhizobium*
  - (iii) *Propionibacterium.* 3×2=6
- (b) What is a capsule ? Discuss the importance of capsule in bacteria citing suitable examples. 5
- (c) What are various methods of asexual reproduction in bacteria ? 4
5. (a) Write short notes on (any *three*) :
- (i) Disinfection by phenolics
  - (ii) Methods of culturing anaerobes
  - (iii) Flagellar arrangement in bacteria
  - (iv) Phases of bacterial growth curve. 4×3=12
- (b) Give an example of each of the following (any *three*) :
- (i) Probiotic bacteria
  - (ii) Budding bacteria
  - (iii) Plant pathogenic bacteria
  - (iv) Radiation resistant bacteria. 1×3=3

6. (a) Comment on the molecular methods used for bacterial taxonomy. 4
- (b) Give the principle of acid fast staining in bacteria. Give an example of acid fast bacteria. 4
- (c) What are L forms ? 2
- (d) Name any *one* disease caused by the following bacteria (any *five*) :
- (i) *Vibrio*
  - (ii) *Helicobacter*
  - (iii) *Neisseria*
  - (iv) *Coxiella*
  - (v) *Clostridium*
  - (vi) *Bacillus*. 1×5=5