

Exam. Code : 107401

Subject Code : 2179

B.Sc. (Biotechnology) 1st Semester
GENERAL MICROBIOLOGY—A
Paper—BT-8

Time Allowed—3 Hours] [Maximum Marks—40

Note :— Attempt the entire Section A, any *five* questions from Section B and any *two* questions from Section C.

SECTION—A

1. Define the following very briefly :

- (i) Synthetic medium
- (ii) Extremophiles
- (iii) Pure culture
- (iv) Disinfection
- (v) Ribotyping
- (vi) Microbial culture collection
- (vii) Peritrichous flagella
- (viii) Yeast.

1×8

SECTION—B

2. (a) Define limit of resolution of a Bright field microscope.
 - (b) How the resolving power of light microscope can be improved ?
3. Compare and contrast various methods employed for the sterilization of culture media.

2+2

4

4. (a) Differentiate between bacteria and viruses.
(b) Differentiate between enrichment medium and maintenance medium. 2+2
5. (a) Give a schematic cycle of a lytic virus.
(b) What is lyophilization ? 2+2
6. (a) Why gram negative bacteria are strong pathogens ?
(b) Differentiate between negative and positive bacteria staining. 2+2
7. (a) What are serotypes ? Discuss their significance.
(b) What are the components of *Microbacterium* cell wall ? 2+2
8. (a) What is molecular taxonomy ?
(b) What is Bergey's manual of determinative bacteriology ? How many volumes exist for this manual ? 2+2
9. (a) How classical taxonomy is different from numerical taxonomy ?
(b) Briefly discuss the principle of DNA hybridization. 2+2

SECTION—C

10. Discuss various types of light microscopy. Give the principle and application of each. 6
11. Discuss various methods used for purification and preservation of microbes. 6
12. Draw the typical structure of a bacterial cell and label its various parts. Differentiate gram +ve and gram -ve bacteria on the basis of their cell wall. 6
13. Describe the various characteristics taken into consideration for bacterial classification. 6