

Exam. Code : 107401

Subject Code : 1822

B.Sc. Biotechnology 1st Semester

BT-8 : GENERAL MICROBIOLOGY-A

Time Allowed—3 Hours] [Maximum Marks—40

Note :— Attempt *five* questions in all, selecting at least *one* question from each section. The **fifth** question may be attempted from any Section.

SECTION—A

1. Discuss the following in detail :
- (a) The principle and applications of both Bright field and Dark field microscopies.
 - (b) Active and passive transport mechanisms in bacteria. 4×2
2. Write short notes on the following :
- (a) Pasteurisation 3
 - (b) Immunofluorescence 3
 - (c) Chlorine as disinfectant. 2

SECTION—B

3. Discuss the salient features and applications of the following microorganism :
- (a) Yeast
 - (b) Thermophiles. 4×2

4. (a) Discuss the features of any two useful and two pathogenic bacterial genera along with suitable examples. 4
- (b) Discuss any two long-term and two short-term microbial cell preservation methods in detail. 4

SECTION—C

5. Discuss the differences between the following :
- (a) Gram-positive and Gram-negative cell wall
 - (b) Staining techniques for staining vegetative cell and spores of bacteria. 4×2
6. Discuss the following :
- (a) Structure and functions of different parts of bacterial flagella in Gram-negative bacteria. 4
 - (b) LPS 2
 - (c) Teichoic acid. 2

SECTION—D

7. (a) Discuss the various criteria used for classification of bacteria. 4
- (b) Write note on the Binary nomenclature. What are the eight major taxonomic ranks in bacterial classification ? 4
8. (a) Discuss Whittaker's system of Classification. 4
- (b) Briefly discuss the various sections of Bergey's Manual of Determinative Bacteriology. 4