

Bachelor of Science (B.Sc.) Semester—I (C.B.S.) Examination

BIO-TECHNOLOGY (Microbiology)

Compulsory Paper—1

Time : Three Hours]

[Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw well labelled diagrams wherever necessary.

1. What is differential staining ? Describe the principle and procedure of gram staining. 10

OR

Describe the principle, construction and applications of transmission electron microscope. 10

2. Describe the structure of gram positive bacterial cell wall, in detail. 10

OR

Describe the process of endospore formation in bacteria. 10

3. Describe in detail the lytic cycle of T₄ phage. 10

OR

(a) Write a note on viral symmetry. 5

(b) Write a note on classification of viruses on the basis of nucleic acid. 5

4. (a) What are non synthetic media ? Explain with suitable examples. 5

(b) How bacteria can be classified on the basis of nutritional requirement ? 5

OR

(c) What are micronutrients and macronutrients ? Give one example each. 5

(d) Explain enriched and enrichment media with suitable examples. 5

5. Solve any *ten* :

(i) What is numerical aperture ? 1

(ii) Write one example of basic dye. 1

(iii) Which oil is used while using oil immersion objective ? 1

(iv) Flagella are made of which protein ? 1

(v) What is meant by staphylococci ? 1

(vi) Define plasmid. 1

(vii) Name one group of archea. 1

(viii) What is a phage ? 1

(ix) Write one example of animal virus. 1

(x) What is a differential medium ? 1

(xi) What is a source of Agar-Agar ? 1

(xii) What is peptone ? 1