

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

BIO-TECHNOLOGY (MICROBIOLOGY)

Compulsory Paper—1

Time : Three Hours]

[Maximum Marks : 50

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

(2) Draw well labelled diagrams wherever necessary.

1. What is Differential Staining ? Describe in detail Gram Staining. 10

OR

Discuss principle, construction and application of Transmission Electron Microscopy. 10

2. Define Endospore. Explain the process of endospore formation in bacteria. 10

OR

Describe structure of flagella of Gram positive and Gram negative bacteria. 10

3. (a) Explain lysogenic cycle of viral replication. 5

(b) Write a note on Viral symmetry. 5

OR

Describe in detail the lytic cycle of viral replication. 10

4. (a) Define Nutrition. How can bacteria be classified on the basis of nutritional requirements ? 5

(b) Explain the various components of non-synthetic medium. 5

OR

(c) Explain with one example :

(i) Enrichment Media

(ii) Differential Media. 5

(d) What are Micronutrients and Macronutrients ? Give its example. 5

5. Solve any **TEN** :—

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|---|---|
| (i) What is a plasmid ? | 1 |
| (ii) Define resolving power of microscope. | 1 |
| (iii) Write the function of chromogen. | 1 |
| (iv) Why oil is used in oil immersion objective ? | 1 |
| (v) What is meant by Streptococcus ? | 1 |
| (vi) What is the function of fimbriae ? | 1 |
| (vii) Write any one difference between bacterial and archeal cell membrane. | 1 |
| (viii) Define virion. | 1 |
| (ix) Name two distinct groups of archaea. | 1 |
| (x) Give any two examples of selective media. | 1 |
| (xi) Define synthetic media. | 1 |
| (xii) Name any two enriched media. | 1 |