

Bachelor of Science (B.Sc.) Semester—I (C.B.S.) Examination
BIO-CHEMISTRY
Compulsory Paper—2
(Microbiology and Virology)

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 the theory of Spontaneous Generation ? Discuss in detail the controversy over spontaneous generation. 10

OR

(a) Describe briefly each component of an ordinary compound microscope. 5
(b) Describe the principle and applications of fluorescent microscopy. 5

2. (a) Describe the principle and technique of endospore staining. 5
(b) Describe the general characteristics of viruses. 5

OR

Give a detailed account of lytic cycle of a bacteriophage. 10

3. (a) Differentiate between cell wall structure of gram positive and gram negative bacteria. 5
(b) Draw a well labelled diagram of typical bacterial cell and an endospore. 5

OR

Write short notes on :

(a) Bacterial plasmids 2½
(b) Bacterial ribosomes 2½
(c) Shape and size of bacteria 2½
(d) Slime layer and capsule. 2½

4. Describe the phases of bacterial growth curve in detail. 10

OR

Write notes on :

(a) Turbidostat 2½
(b) Classification of bacteria on the basis of temperature requirements 2½
(c) Measurement of growth by Viable Cell Count Method. 2½
(d) Synchronous culture. 2½

5. Solve any **TEN** of the following :

(i) Name one factor that affects the resolving power of a microscope.	1
(ii) Give one application of dark field microscopy.	1
(iii) What is meant by Immunization ?	1
(iv) Name the mordant used in gram staining.	1
(v) Name any one acid fast bacterium.	1
(vi) Name any one endospore forming bacteria.	1
(vii) What are fimbriae ?	1
(viii) Give one difference between a prokaryotic and eukaryotic cell.	1
(ix) Name any one gram positive bacteria.	1
(x) Define generation time.	1
(xi) What are micro aerophilic organisms ?	1
(xii) What is meant by a continuous culture ?	1