KNT/KW/16/5056

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