Bachelor of Science (B.Sc.) Semester–I Examination

BIO-CHEMISTRY (MICROBIOLOGY & VIROLOGY)

Optional Paper–2

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. Describe in detail the principle, working and applications of fluorescence microscopy. 10

OR

Write short notes on :

(a) Controversy over spontaneous generation. 5

(b) Germ theory of diseases. 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 gram positive and negative bacterial cell well. 5

(b) With a well labelled diagram describe the structure of a Bacterial cell. 5

OR

Write a note 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 5

(b) Classification of bacteria on the basis of their temperature requirements. 5

5. Answer 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) Which scientist developed the vaccination to protect against small pox ? 1

(IV) What is a dye ? 1

(V) The first step in infection of a host bacterial cell by a phage is _____. 1

(VI) What is simple staining ? 1

(VII) Write one point of difference between slime layer and capsule. 1

(VIII) What are episomes ? 1

(IX) Comma shaped are called _____. 1

(X) Define generation time. 1

(XI) What is meant by acidophilic bacteria ? 1

(XII) What are micro-aerophilic organisms ? 1