

Bachelor of Science (B.Sc.) Semester—II Examination

BIO-CHEMISTRY (Microbiology and Immunology)

Paper—2

Time : Three Hours]

[Maximum Marks : 50

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

(2) Draw diagrams wherever necessary.

1. Give a detailed account of the classification of bacteria on the basis of their nutritional requirements. 10

OR

What is meant by a pure culture ? Describe the pour plate and streak plate methods for obtaining pure culture. 10

2. Define the term microbial control. Describe osmotic pressure, surface tension and filtration as methods for controlling growth of microorganisms. 10

OR

Explain the role of following as chemotherapeutic agent :

- (a) Antibiotics
(b) Sulphonamides. 10

3. Write notes on the following organs of the immune system :

- (a) Thymus 2½
(b) Bone marrow 2½
(c) Lymph nodes 2½
(d) Spleen. 2½

OR

What are antibodies ? Describe in detail the basic structure of IgG molecule. 10

4. What are monoclonal antibodies ? Discuss the method of preparation and their applications. 10

OR

Briefly describe :

- (a) Cellular immunity 5
(b) Humoral immunity. 5

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

- (i) What are phototrophs ?
(ii) Name the carbon source in nutrient broth.
(iii) What is meant by an enrichment culture medium ?
(iv) Define a sanitizer.
(v) Give one point of difference between a microbiocidal and a microbiostatic agent.
(vi) Name any one heavy metal involved in oligodynamic action.
(vii) What are macrophages ?
(viii) Give the full form of MALT.
(ix) Define a hapten.
(x) What is full form of MHC ?
(xi) Define the term clonal selection.
(xii) What are memory cells ? 1×10=10