

NRT/KS/19/2060

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

BIO-CHEMISTRY (Microbiology & Immunology)

Optional 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. What are the basic nutritional requirements needed for bacterial growth in a culture medium ? 10

OR

What are enrichment cultures ? How can we use an enrichment culture media to isolate a particular bacteria ? Explain using example. 10

2. Write notes on :

(a) Factors influencing anti microbial activity. 5

(b) Mechanism of cell injury. 5

OR

(c) Antibiotics and its uses. 5

(d) Standardization of disinfectants. 5

3. Write notes on :

(a) Bone marrow. 2½

(b) Active and passive immunity. 2½

(c) Antigen and Antibody reaction. 2½

(d) Functions of antibody. 2½

OR

Describe the general properties of different types of antibodies. 10

4. What is complement system ? How does it get activated ? 10

OR

Write notes on :

(a) Clonal selection theory. 5

(b) Hybridoma technology. 5

5. Answer any **ten** questions from the following :

(i) What are the components of nutrient agar medium ?

(ii) What are phototrophs ?

(iii) What is a differential medium ?

(iv) Define sanitizer.

(v) What is meant by oligodynamic action of metals ?

(vi) Name one metal having antimicrobial activity.

(vii) Why is Bone marrow important for immune system ?

(viii) Expand the term MHC.

(ix) T_c-cell recognizes which class of MHC molecules ?

(x) What are monoclonal antibodies ?

(xi) Which complement pathway is activated by antibodies ?

(xii) Which cells give humoral immunity ? 10