

B.Sc. (CBCS Pattern) Semester - IV
011B - Biotechnology Paper-II (Immunology and Biostatistics)

P. Pages : 2

Time : Three Hours



GUG/S/23/11995

Max. Marks : 50

1. Describe in detail about cells involved in immunity. **10**

OR

a) Write a note on Granulocytes. **2½**

b) Write a brief account on primary lymphoid organs. **2½**

c) Write a note on immunoglobulins. **2½**

d) Give a brief account on concept of immunity. **2½**

2. Describe the mechanism of cell mediated immunity in detail. **10**

OR

a) Give a brief account on innate immunity. **2½**

b) Write a note on MHC molecules. **2½**

c) Write about mechanism of delayed type hypersensitivity. **2½**

d) Write a note on vaccination. **2½**

3. Describe in detail about production of monoclonal antibodies through hybridoma technology. **10**

OR

a) Describe the mechanism of precipitation reaction. **2½**

b) Write a note on complement system. **2½**

c) Describe the principle of RIA. **2½**

d) Write the applications of monoclonal antibodies. **2½**

4. Describe in detail different methods for presentation of statistical data. **10**

OR

- a) Write a note on standard deviation. 2½
- b) Discuss in brief about methods of sampling. 2½
- c) Write a note on chi-square test. 2½
- d) Write about measures of central tendency. 2½

5. Solve any ten.

- a) Write any two WBC's which are phagocytic in nature. 1
- b) Write the names of any two primary lymphoid organs in human body. 1
- c) Which immunoglobulin is most abundant in human body? 1
- d) What is ADCC? 1
- e) What is autoimmunity? 1
- f) Define vaccine. 1
- g) What are monoclonal antibodies? 1
- h) What is agglutination? 1
- i) What is the significance of VDRL test? 1
- j) What is median? 1
- k) What is mean deviation? 1
- l) Define median in biostat. 1
