

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

P. Pages : 2

Time : Three Hours



GUG/S/24/11995

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carries equal marks.
2. Draw the diagram wherever it is necessary.

1. Give detail account on primary lymphoid organs. 10

OR

- a) Write a note on spleen. 2½
- b) Write a note on IgE antibody. 2½
- c) Give the classification of Immunity. 2½
- d) Write about granulocyte and agranulocytes. 2½

2. Describe about discovery, principle and significance of vaccination. 10

OR

- a) Discuss about complement system in short. 2½
- b) Discuss the concept of autoimmunity. 2½
- c) Discuss about humoral immunity. 2½
- d) Write a note on ADCC. 2½

3. What is precipitation? Discuss various applications of precipitation section. 10

OR

- a) Give principle of complement fixation test. 2½
- b) Write about radial immunodiffusion Assay. 2½
- c) Describe ELISA technique. 2½
- d) Describe about toxin-antitoxin reaction. 2½

4. Explain measures of central tendency by mean, mode and median. 10

OR

- a) Give the information about dendrogram. 2½
- b) Write about chi-square test. 2½
- c) Discuss sampling errors? 2½
- d) Give the information about pie chart. 2½

5. Solve **any ten** of the following.

- a) Which antibody is known as secretory antibody? 1
- b) Write any two WBC's which are phagocytic in nature. 1
- c) Which antibody can cross placenta? 1
- d) Which test is used to check delayed type of hypersensitivity? 1
- e) Enlist any two autoimmune disorders. 1
- f) What is MHC molecule? Give its significance. 1
- g) What is antigen? 1
- h) Give the full form of VDRL 1
- i) What are monoclonal antibodies? 1
- j) Describe mean deviation. 1
- k) What is standard error. 1
- l) Discuss any one method of sampling. 1
