

B.Sc. (With Credits)-Regular-Semester 2012 Sem IV
B.Sc.2472-Biotechnology-II : Paper-II (Immunology and Biostatistics)

P. Pages : 2

Time : Three Hours



GUG/W/16/5595

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. What is immunity? Explain the role of cells involved in the immunity. 10

OR

What is meant by hypersensitivity? Explain type I, type IV hypersensitivity reactions.

2. Define precipitation reaction & give its principle and applications. 10

OR

Discuss different methods of sampling and add a note on sampling error & non – sampling error.

3. a) Write a note on innate immunity. 2½

b) Discuss the principle and significance of vaccination. 2½

c) Describe Radial Immunodiffusion technique. 2½

d) Write merits and demerits of arithmetic mean. 2½

OR

e) Discuss the factors affecting antigenicity. 2½

f) Write in brief about MHC complex. 2½

g) What is Monoclonal antibodies? Give its applications in diagnosis. 2½

h) Define mean? Haemoglobin percentage of 11 patients of the hospital ward was observed as 8mgs, 6mgs, 8mgs, 5mgs, 7mgs, 8mgs, 6mgs, 5mgs, 7mgs, 9mgs & 9mgs. Find the mean of data using formula. 2½

4. a) Describe basic structure of antibody molecule. 2½

b) Explain the concept of autoimmunity with example. 2½

c) Discuss ELISA test in diagnosis of HIV antibodies. 2½

d) Define standard deviation and explain its significance. 2½

OR

- e) Name the components of the complement system. 2½
- f) Explain the role of cytotoxic T-lymphocyte. 2½
- g) Describe principle of Widal test. 2½
- h) Define median. Write its merits & demerits. 2½

5. Attempt any ten.

- a) What is epitope? 1
- b) What is bivalent antigen? 1
- c) What is affinity & avidity? 1
- d) What are cytokines? 1
- e) Name the scientist who discovered vaccination. 1
- f) Write full form of ADCC? 1
- g) What is complement? 1
- h) What is VDRL test. 1
- i) Write two application of agglutination test. 1
- j) Write full form of HAT medium. 1
- k) What is harmonic mean? 1
- l) What is Chi-square. 1
