

(32)

SARDAR PATEL UNIVERSITY
B.Sc. (Genetics) – Fifth Semester Examination (CBCS)
Thursday, 1st November 2018
10:00 a.m. to 01:00 p.m.
US05CGEN05: Immunogenetics

Total Marks: 70

Note: (1) Figures to the right indicate marks.
 (2) Draw a neat and labeled diagram, wherever necessary.

- Q. 1 Choose the most appropriate answer from the four alternatives given: [10]
- i. Agglutination is a _____ type of immunoassay.
 - (a) Qualitative
 - (b) Quantitative
 - (c) Both (a) and (b)
 - (d) None of them
 - ii. method for measuring antigen antibody reaction.
 - (a) Enzyme Linked Immunosorbent Assay
 - (b) U.V. Spectrophotometer
 - (c) Real Time PCR
 - (d) All of them
 - iii. Lysis of foreign cell is mediated through
 - (a) Ig D and Ig E
 - (b) Ig M and Ig G
 - (c) Ig M only
 - (d) Ig A only
 - iv. The technology used for the production of monoclonal antibodies is.....
 - (a) Mass culture technology
 - (b) Hybridoma technology
 - (c) Suspension culture
 - (d) None of these
 - v. Monoclonal antibodies are
 - (a) Heterogenous antibodies produces from single clone of plasma cells
 - (b) Homogenous antibodies produces from single clone of plasma cells
 - (c) Both (a) and (b)
 - (d) None of them
 - vi. Class I MHC genes encodes on the surface of nearly all nucleated cells.
 - (a) Peptide expressed
 - (b) Glycoproetins expressed
 - (c) Lipids expressed
 - (d) None of these
 - vii. MHC class I is a cell surface molecules present on.....
 - (a) B cell
 - (b) All nucleated cell
 - (c) APC's
 - (d) T cell
 - viii. The complement system consist of..... and membrane proteins.
 - (a) 9 serum
 - (b) 19 serum
 - (c) 25 serum
 - (d) 30 serum
 - ix. Which category of hypersensitivities is IgE-mediated?
 - (a) Type I
 - (b) Type II
 - (c) Type III
 - (d) Type IV
 - x. Which group of the following could be called immune disorder?
 - (a) SCID and diphtheria
 - (b) AIDS and cholera
 - (c) SCID and AIDS
 - (d) None of them

Q.2 Answer any TEN from the following: [20]

- i. What do you mean by autoimmunity?
- ii. Define the following: Epitopes and Heptanes.
- iii. Write a short note on class of competitive ELISA.
- iv. Write a short note on BCR.
- v. Define monoclonal antibody.
- vi. Write a short note on: role of antigen-presenting cells.
- vii. Write a short note on phagocytosis.
- viii. Give different strategies for immunosuppression.
- ix. What is MHC?
- x. Give an overview of live and attenuated vaccines.
- xi. Define non-edible vaccine.
- xii. What do you mean by immune deficiencies?

Q.3 (a) Explain in detail about ELISA technique for detecting antigen or antibody. [06]

(b) Write the characteristics of antigen-antibody interaction. [04]

OR

Q.3 (a) Write a detail note on Immunoglobulin structure and its classes. [06]

(b) Give an account on complement fixation test. [04]

Q.4 Write a detail note on deletional and inversional joining of Ig genes. [10]

OR

Q.4 Give an account of means of antibody diversity. [10]

Q.5 Write a detail note on classical and alternative pathway of complement activation. [10]

OR

Q.5 Give structure and types of MHC. Write a note on structure and functions of MHC class I and Class II. [10]

Q.6 (a) Discuss in detail about mechanism of generation of autoimmune disorders. [05]

(b) Write an elaborative note on vaccines. [05]

OR

Q.6 (a) Give a detail account on AIDS. [06]

(b) Define hypersensitivity. Give a brief account of Type I and Type II Hypersensitivities. [04]