

(A-94)

SARDAR PATEL UNIVERSITY
MSc (Integrated) Biotechnology, Sixth Semester Examination
Tuesday, 21st April 2015
2:30 pm to 5:30 pm
PS06CIGB01: Fundamentals of Immunology

Total Marks- 70

Note: i) Attempt all questions.
ii) Marks are indicated on the right hand side.

Q.1 Answer the following Multiple Choice Questions. All are compulsory **08**

1. Natural humoral immune response against a pathogen leads to the production of
a) polyclonal antibodies b) monoclonal antibodies c) macrophages d) none of these
2. Antibodies consists of
a) 2 light chains and 2 heavy chains arranged in a Y-shaped configuration b) A light chain and 2 heavy chains arranged in a Y-shaped configuration c) 2 light chains and a heavy chain arranged in a Y-shaped configuration d) all of these
3. The arrangement of MHC genes of HLA complex on chromosome is in the order
a) I,II,III b) II,I,III c) III,I,,II d) II,III,I
4. Commercially available ELISA kits are used for the detection of
a) rotavirus b) hepatitis B surface antigen c) anti-HIV antibodies d) all of these
5. Passive movement of Ab and Ag through a gel
a) Primary Reaction b) ELISA Detection c) Immunodiffusion d) none of these
6. Which of the following is a transmembrane glycoprotein that serves as a co-receptor for the T cell receptor (TCR), and is also known as a cytotoxic T cell (CTL)?
a) Cluster of differentiation 4 (CD4+) b) Cluster of differentiation 8 (CD8+)
c) Plasma cells (activated B cells) d) None
7. What types of cell is class I MHC found on?
a) B cells b) Macrophages c) Dendritic cells d) Essentially all cells
8. _____ inflammatory cells mediators stimulate pain receptors in skin
a) Kinins b) Fibrin c) Histamine d) None

Q.2 Attempt Any Seven of the following: **14**

1. Write the difference between innate and acquire immunity?
2. Diagrammatically explain steps of phagocytosis.
3. List the properties of immunogen.
4. What are haptens?
5. Which cells are called antigen presenting cells and why?
6. Explain the structure of T cell receptor complex.
7. What do you mean by precipitation and agglutination?
8. Explain in brief synthetic peptide vaccine.
9. What are the advantages and disadvantages of killed whole organism vaccines.

P.T.O

- Q.3 A** Explain spleen - a secondary lymphoid organ with diagram and list its functions. 06
- Q.3 B** Explain Humoral and Cell-mediated immunity. 06
- OR**
- Q.3 B** Write a note on role of granulolytic cells in immune response. 06
- Q.4 A** Explain production of monoclonal antibody. 06
- Q.4 B** Describe structure, function and biological properties of Ig classes. 06
- OR**
- Q.4 B** Discuss the classical pathway of complement system activation. 06
- Q.5 A** Diagrammatically explain structure of class I and Class II MHC. 06
- Q.5 B** Explain the response generated by B cell towards the antigen. 06
- OR**
- Q.5 B** Write a short note on the thymic selection of the T cell repertoire. 06
- Q.6 A** Explain ELISA and its types. 06
- Q.6 B** Write a note on Complement Fixation Test. 06
- OR**
- Q.6 B** Discuss in detail the precipitation reactions. 06
