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SARDAR PATEL UNIVERSITY
M. Sc. (III Semester) Examination
Wednesday, 22nd April, 2015
2.30 p.m. to 5.30 p.m.
Biotechnology - PS03CBIT02 – Immunology

Q.1 Tick mark/select the right answer for the following: (08 marks)

I Which of the following is true for MHC genes:
A) They are polymorphic B) Are codominantly expressed
C) Are inherited as a haplotype D) All of the above

II Unresponsiveness towards antigenic stimulus is called:
A) Immunogenicity B) Molecular mimicry
C) Cross reactivity D) Anergy

III Somatic hyper mutation occurring in germinal centers results in :
A) Antibody class switching B) Autoimmune disease
C) Affinity maturation D) Immune unresponsiveness

IV Which one of the following is not antigen presenting cell?
A) B cell B) Tc- cell
C) Dendritic cell D) Macrophage

V Igα/Igβ chains are present in:
A) TCR
B) MHC
C) BCR
D) None of the above

VI Who was given Nobel Prize for gene rearrangement in antibody production?
A) Karl Landsteiner B) Susumu Tonegawa
C) Peter Medawar D) Peter Doherty

VII Two or more cytokines that mediate similar functions are said to have:
A) Redundancy B) Pleiotropy
C) Synergy D) Antagonism

VIII Which of the following activates the alternative pathway of complement?
A) Lipopolysaccharides B) Fungal and yeast cell wall
C) Some viruses D) All of the above

Q.2 Attempt/answer (in short) **any Seven** from the following: (14 marks)

a) Explain natural acquired immunity.
b) What is erythroblastosis fetalis?
c) Explain agglutination reaction.
d) What are isografts?
e) What are integrins? What is the result of their deficiency?
f) Draw and explain structure of class I MHC molecule.
g) What is immunotolerence?
h) Explain opsonization.
i) What are polyclonal antibodies?

Q.3 A) Describe steps involved in classical pathway of complement activation leading to MAC formation. (06 marks)

B) What is inflammation? Explain the cascade of events involved in acute inflammatory response. (06 marks)

OR

B) Explain the structure and function of lymph node. (06 marks)

Q.4 A) Explain the principle and technique of monoclonal antibody production. (06 marks)

B) Explain ELISA tests in detail. (06 marks)

OR

B) Discuss the major mechanisms involved in generating antibody diversity. (06 marks)

Q.5 A) Discuss cytosolic pathway of antigen processing. (06 marks)

B) Discuss the steps involved in T cell activation. (06 marks)

OR

B) Discuss how CTL kills target cell. (06 marks)

Q.6 A) Discuss in detail Type I hypersensitivity reaction. (06 marks)

B) Explain steps involved in graft rejection. (06 marks)

OR

B) Explain organ specific autoimmune diseases. (06 marks)

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