

SEAT No. \_\_\_\_\_

NO. OF PRINTED PAGES: 02

[61 & A-US]

**Sardar Patel University**

B.Sc. Biotechnology Fifth Semester (NC)

Thursday, 12-04-2018

2:00 p.m to 5:00 p.m

US05CBIT04 (Immunology)

Total Marks: 70

Note: Figures to the right indicates marks.

[10]

**Q.I Multiple Choice Questions**

- 1) \_\_\_\_\_ indicates a positive reaction in the complement fixation test.  
a) No haemolysis of sheep RBCs      b) Haemolysis of sheep RBCs  
c) Solubilization of sheep RBCs      d) Agglutination of sheep RBCs
- 2) Which enzyme/s has been employed for ELISA?  
a) Alkaline phosphatase      b) Horseradish peroxidase  
c) Beta galactosidase      d) All of these
- 3) Which of the following is not Cytokine?  
a) IL-2      b) INF  
c) TNF      d) None of these
- 4) Progenitor B cells proliferates in \_\_\_\_\_.  
a) Lungs      b) Heart  
c) Bone marrow      d) Thymus
- 5) How many selection process the thymocytes undergo in the thymus?  
a) One      b) Two  
c) Three      d) Four
- 6) The classical & alternative pathways meet at complement component \_\_\_\_\_.  
a) C<sub>3</sub>      b) C<sub>4</sub>  
c) C<sub>5</sub>      d) C<sub>4</sub>b
- 7) Which of the following is not the immunodeficiency disease?  
a) Graves disease      b) SCID  
c) X-linked gammaglobulinemia      d) AIDS
- 8) In \_\_\_\_\_, MHC is also called as H-2.  
a) Mice      b) Human  
c) Sheep      d) Rabbit
- 9) Delayed type hypersensitivity is also called as \_\_\_\_\_.  
a) Type I      b) Type II  
c) Type III      d) Type IV
- 10) \_\_\_\_\_ is the prototype autoimmune disease mediated by blocking antibodies.  
a) Systemic Lupus Erythematosus      b) Myasthenia Gravis  
c) Multiple Sclerosis      d) Rheumatoid Arthritis

P.T.O

- Q.II** Answer the following questions in short. (Attempt any 10) [20]
- Define the term : Prozone effect & antibody avidity.
  - What is hemagglutination?
  - Write about complement ELISA.
  - Define Cytokines.
  - Write about the competence & progression signals in activation of B cells.
  - What is the importance of natural killer cells?
  - Give the functions of complement system.
  - What is immunodeficiency?
  - Mention the immune disorder involving the thymus.
  - Define Autoimmunity
  - Write in brief about Type II hypersensitivity.
  - Mention various types of vaccines.
- Q.III a)** Explain in detail complement fixation test with neat & labelled diagram. [05]  
**b)** What is precipitation reaction? Write in detail about single & double diffusion. [05]
- OR**
- Q.III a)** Give an explanatory note on immunoelectrophoresis. [05]  
**b)** What is ELISA? Write in detail indirect ELISA with diagram. [05]
- Q.IV** Describe maturation, activation & differentiation of T lymphocyte with relevant diagram. [10]
- OR**
- Q.IV a)** Give an account on mechanism of natural killer cells. [06]  
**b)** Write in detail properties & biological functions of cytokines. [04]
- Q.V a)** Discuss in detail alternative pathway of complement system. [06]  
**b)** Write short note on SCID. [04]
- OR**
- Q.V a)** Explain in detail classical pathway of complement system. [06]  
**b)** Write in brief about secondary immunodeficiency. [04]
- Q.VI** Describe MHC molecules with neat & labeled diagram [10]
- OR**
- Q.VI a)** Give a detail note on Type I hypersensitivity. [06]  
**b)** What is graft rejection? Explain various types of grafts. [04]

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