

102/103/126

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

No. of pages: 2

Sardar Patel University  
M. Sc. (II Semester) Examination  
Saturday, 23<sup>rd</sup> March, 2019, 2.00 p.m. to 5.00 p.m.  
Microbiology/Biochemistry/Biotechnology  
PS02CMIC/BIC/BIT23 – Fundamentals of Immunology

Total marks: 70

- Q.1 Select the right/most appropriate answer for the following: (08 marks)
- A. Complement fixation pathway involving soluble C3 convertase is
- a. Alternative
  - b. Classical
  - c. MBL
  - d. All of the above
- B. The plasma cells residing in Peyer's patches secrete ----- immunoglobulin molecules.
- a. IgG
  - b. IgM
  - c. IgA
  - d. IgD
- C. Which of the following is most effective antigen presenting cell?
- a. Macrophage
  - b. Dendritic cell
  - c. B cell
  - d. None of the above
- D. Chloroquine treatment blocks exogenous antigen processing as
- a. It blocks protein synthesis
  - b. It blocks TAP function
  - c. It disrupts the Golgi apparatus
  - d. It blocks decrease in lysosome pH
- E. Ability of two or more cytokines to mediate similar function is
- a. Antagonism
  - b. Redundancy
  - c. Synergy
  - d. Pleotropy
- F. Expression of single specificity IgM and IgD on naïve B cells is because of
- a. Class switching
  - b. Allelic exclusion
  - c. Somatic hyper mutation
  - d. All of the above
- G. Cytokines functioning through GPCR are
- a. TNFs
  - b. Chemokines
  - c. INFs
  - d. Hematopoietin
- H. Role of phagocytosis in host defense was first reported by
- a. Jules Bordet
  - b. Elie Metchnikoff
  - c. Louis Pasteur
  - d. Susumu Tonegawa

1

(P.T.O.)

Q.2 Answer/attempt **any seven** from the following: (14 marks)

- a) What is immunoglobulin domain?
- b) Differentiate bacterial septic shock and bacterial toxic shock.
- c) Explain role of adjuvants.
- d) Explain class switching.
- e) Write on opsonins and opsonization.
- f) Why antibodies against ABO blood group are examples of cross reacting antibodies?
- g) What is the strategy of immune system to kill intracellular bacterial pathogens?
- h) Why RIA is considered as competitive assay?
- i) What are collectins and what is their role?

- Q.3 A. Discuss generation of inflammatory response upon pathogen entry and its clearance from the host tissues. (06 marks)
- B. Explain the role of PAMPs and PRRs in innate immune system citing suitable examples. (06 marks)

**OR**

- B. Discuss structural features of the organ involved and generation of humoral immune response to antigens injected in the blood. (06 marks)

- Q.4 A. Discuss classical pathway of complement activation and its regulation. (06 marks)
- B. Briefly discuss the mechanisms leading to generation of antibody diversity during rearrangement of variable region genes of light chain. (06 marks)

**OR**

- B. Explain how a B cell produces different classes of Ig molecules having same specificity at different stages of immune response. (06 marks)

- Q.5 A. Discuss pathway for processing of exogenous antigens and its loading on to MHC molecule. (06 marks)
- B. Write note on therapeutic applications of cytokines. (06 marks)

**OR**

- B. Discuss in details signal transduction mediated by INFs and how they help in generation of antiviral state. (06 marks)

- Q.6 A. Write on different types of ELISA and their applications. (06 marks)
- B. Write a note on immunity to viral infections. (06 marks)

**OR**

- B. Write on NK cells and their role in immune system. (06 marks)