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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.  
Zoology  
PS02CZOO23 – 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
- Alternative
  - Classical
  - MBL
  - All of the above
- B. The plasma cells residing in Peyer's patches secrete ----- immunoglobulin molecules.
- IgG
  - IgM
  - IgA
  - IgD
- C. Which of the following is most effective antigen presenting cell?
- Macrophage
  - Dendritic cell
  - B cell
  - None of the above
- D. Chloroquine treatment blocks exogenous antigen processing as
- It blocks protein synthesis
  - It blocks TAP function
  - It disrupts the Golgi apparatus
  - It blocks decrease in lysosome pH
- E. Ability of two or more cytokines to mediate similar function is
- Antagonism
  - Redundancy
  - Synergy
  - Pleotropy
- F. Expression of single specificity IgM and IgD on naïve B cells is because of
- Class switching
  - Allelic exclusion
  - Somatic hyper mutation
  - All of the above
- G. Cytokines functioning through GPCR are
- TNFs
  - Chemokines
  - INFs
  - Hematopoietin
- H. Role of phagocytosis in host defense was first reported by
- Jules Bordet
  - Elie Metchnikoff
  - Louis Pasteur
  - Susumu Tonegawa

- Q.2 Answer/attempt **any seven** from the following: (14 marks)
- a) What is immunoglobulin domain?
  - b) Briefly write on properties of antigens..
  - c) Explain rôle of adjuvants.
  - d) Explain class switching.
  - e) Write on opsonins and opsonization.
  - f) What is agglutination reaction?
  - g) What is the strategy of immune system to kill intracellular bacterial pathogens?
  - h) Why RIA is considered as competitive assay?
  - i) Draw labeled diagram of MHC class I molecule.
- Q.3 A. Discuss generation of inflammatory response upon pathogen entry and its clearance from the host tissues. (06 marks)
- B. Explain the rôle of PAMPs and PRRs in innate immune system citing suitable examples. (06 marks)
- OR**
- B. Discuss structure and function of thymus. (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. Discuss structure and function of different Ig molecules. (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 cytokine associated diseases. (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 rôle in immune system. (06 marks)