

**M. SC. (MEDICAL BIOTECHNOLOGY) SEM-II (CHOICE  
BASED CREDIT SYSTEM) : WINTER - 2017**

**SUBJECT: IMMUNOLOGY**

Day : Monday  
Date : 30/10/2017

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 60

**W-2017-1050**

**N.B.**

- 1) Q.1 and Q.5 **COMPULSORY.**
- 2) Attempt any **TWO** questions from Q.2, Q.3, Q.4 from section I and Q.6, Q.7 and Q.8 from section II
- 3) Answers to the both the sections should be written in **SEPARATE** answer book.

**SECTION – I**

- Q.1** Answer in brief (**ANY FIVE**) **(10)**
- a) Name two attributes of adaptive immune response.
  - b) State the closest progenitor cell that give rise to :
    - i) Dendritic cells
    - ii) Neutrophils
  - c) Name any two cells that use antibodies to recognize their targets.
  - d) Name two non-covalent interactions involved in antigen antibody interaction.
  - e) What are Thymus independent antigens?
  - f) Name two enzymes commonly used in ELISA technique.
- Q.2** Answer the following: **(10)**
- a) Describe how the following experimental manipulations were used to determine antibody structure
    - i) Reduction and alkylation of antibody molecule.
    - ii) Enzymatic digestion of antibody molecule.
  - b) Explain the alternative pathway of complement activation.
- Q.3** Answer the following: **(10)**
- a) What are NK cells? Explain how cytotoxic activity of NK cells is restricted to altered self-cells.
  - b) Explain the role of bone marrow in B cell maturation.
- Q.4** Write short notes on **ANY TWO:** **(10)**
- a) Mucosa associated lymphoid tissue
  - b) Immuno-fluorescence
  - c) Phagocytic barrier of innate immune response

P.T.O.

## SECTION – II

- Q.5** State the role of the following (**ANY FIVE**) (10)
- a) ADCC
  - b) Non-specific immunosuppressive drugs
  - c) Prostaglandins
  - d) Transcytosis
  - e) Langerhans's cells
  - f) Heparin
- Q.6** Answer the following: (10)
- a) State the role of T<sub>DTH</sub> cells in Type IV Hypersensitivity.
  - b) What is Tolerance? Discuss the mechanisms of central and peripheral tolerance in detail.
- Q.7** Write short notes on: (10)
- a) Tumor antigens
  - b) Chronic rejection of allografts
- Q.8** Describe the role of TCR and other accessory molecules of T cells required for T cell interactions with APC, B cells and target cells. (10)

**OR**

Describe any two methods of HLA typing.

\* \* \*