

**M. SC. (BIOTECHNOLOGY) SEM-II (2012 COURSE)(CHOICE
BASED CREDIT SYSTEM) : SUMMER - 2018
SUBJECT: IMMUNOLOGY**

Day: Wednesday
Date: 11/04/2018

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60

S-2018-1085

N.B:

- 1) **Q. No.1 and Q. No.5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SEPARATE** answer book.
- 4) Neat diagrams must be drawn **WHEREVER** necessary

SECTION-I

Q.1 Answer the following in brief (**ANY FIVE**): **(10)**

- a) Give two examples of inactivated vaccines.
- b) What are tumor associated antigens?
- c) Explain the term racial immunity.
- d) State the biological properties of Fc region of an immunoglobulin.
- e) State the type of hypersensitivity:
 - i) Which occurs as a result of mismatched blood transfusion.
 - ii) Involves histamine as a mediator.
- f) Name one primary and one secondary immunodeficiency disease.

Q.2 Answer the following questions: **(10)**

- a) Explain the role of cytokine in immune regulation.
- b) State the structure and function of B-cell receptors.

Q.3 Answer the following questions: **(10)**

- a) How does interaction between antigen presenting cells, T_H cells and B cells result in T cell activation and proliferation?
- b) Describe role of inflammatory responses in innate immunity.

Q.4 Write short notes on: (**ANY TWO**) **(10)**

- a) Interleukins
- b) M-cells
- c) Role of C3 and C5 convertase in immune activation

P.T.O.

SECTION-II

Q.5 Indicate whether each of the following statements is true or false. If the statement is false, explain why? (ANY FIVE) (10)

- a) Individuals with pernicious anemia produce antibodies to intrinsic factor.
- b) Acute rejection is mediated by memory cells specific to antigens on the grafted tissue.
- c) Ig- α /Ig- β heterodimer serves as a signal transduction molecule in T-cell receptor.
- d) T_H cells are MHC-I restricted.
- e) For precipitation to occur, antigen must be monovalent.
- f) All immunoglobulin molecules on surface of a given B-cell have the same idiotype.

Q.6 Answer the following questions: (10)

- a) Comment on mechanisms of allograft rejection.
- b) Explain the role of Cell Mediated Immunity in hypersensitivity.

Q.7 Briefly describe: (10)

- a) Importance of immune-surveillance in cancer.
- b) Organ specific autoimmune diseases and pathophysiology of thyroid gland autoimmune disorders.

Q.8 Comment on the cellular and molecular mechanisms that enable the immune system to recognize and attack cancer cells. (10)

OR

Give an account of recombinant vaccines and peptide vaccines for infectious disease.

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