

M. Sc. (Biotechnology) Sem-II (2012 Course)(Choice Based Credit System) : WINTER - 2018

SUBJECT: IMMUNOLOGY

Day: Friday
Date: 26/10/2018

W-2018-1209

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

N.B:

- 1) **Q. No.1 and Q. No.5 are COMPULSORY.**
- 2) Attempt **ANY TWO** questions from **Q. No.2, 3 and 4.**
- 3) Attempt **ANY TWO** questions from **Q. No.6, 7, 8.**
- 4) Answer to both the sections should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** Answer the following in brief (**ANY FIVE**): **(10)**
- a) Define: Epitope and Hapten
 - b) Name and state the function of two primary lymphoid organs
 - c) Differentiate between humoral and cell mediated immune response
 - d) State the role of Complimentarity Determining Regions in immunoglobulins
 - e) State the function of Langerhan's cells
 - f) Expand the terms HGPRT and APC.
- Q.2** Answer the following questions: **(10)**
- a) Explain in brief the biological consequences of complement activation.
 - b) Discuss the endocytic pathway for processing and presentation of exogenous antigens.
- Q.3** Answer the following questions: **(10)**
- a) Describe the proposed pathway for T cell maturation in thymus. Add a note on thymic selection.
 - b) Explain with help of a diagram how antibody diversity is created at the level of Immunoglobulin gene rearrangement
- Q.4** Write short notes on **ANY TWO** of the following: **(10)**
- a) MHC Class I molecules
 - b) Inflammation
 - c) Precipitation reactions in gel

SECTION-II

- Q.5** Answer in brief (**ANY FIVE**) : **(10)**
- a) Sequestered antigens
 - b) Autoimmunity
 - c) Freund's complete Adjuvant
 - d) Different types of vaccines
 - e) Peripheral tolerance
 - f) Isografts
- Q.6** Answer in brief: **(10)**
- a) Describe the sensitization stage of allograft rejection.
 - b) What are tumor antigens? Discuss the two main types of tumor antigens.
- Q.7** Write short notes on: **(10)**
- a) Subunit vaccines
 - b) Immunotoxins
- Q.8** Discuss the mechanisms proposed for induction of autoimmunity. Add a note on any two organ specific autoimmune diseases. **(10)**

OR

Explain in detail Type II hypersensitivity reactions with suitable examples

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