



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 154408

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15 IMMUNOLOGY

Time : 3 Hours]

[Total Marks : 100

Note : Attempt all questions.

1 Attempt any two parts of the following : **10x2=20**

- (a) What are the cells of immune system? How does innate immunity work?
- (b) Describe the process of hematopoiesis and discuss the factors which can influence it.
- (c) What are the characteristics of T and B cell epitopes? Explain their role in adaptive immunity.

2 Attempt any two parts of the following : **10x2=20**

- (a) What are ABO blood group antigens? Explain the cross reactivity of antibodies with ABO blood groups.

- (b) What do you mean by the constant and variable regions of the antibody molecules? Discuss the function of F_{ab} and F_c regions.
- (c) Write short notes on :
 - (i) Adjuvants
 - (ii) Isotypes and Idiotypes

3 Attempt any two parts of the following : **10x2=20**

- (a) What is human MHC? Explain the structural and functional aspect of MHC class I and II molecules.
- (b) What are cytokine? Discuss the function and applications of interferon.
- (c) Write short note on:
 - (i) Immune tolerance
 - (ii) Complement system.

4 Attempt any two parts of the following : **10x2=20**

- (a) What is ELISA ? Discuss the other applications of antigen-antibody interaction.
- (b) What do you mean by vaccination? Discuss the various types of vaccine along with their advantages and disadvantages.
- (c) Describe the hybridoma technology citing the importance of HAT selection.

5 Attempt any two parts of the following:- **10x2=20**

- (a) Discuss the importance of Autograft, Isograft, Allograft and Xenograft in transplant immunology.
 - (b) Discuss the activity of immune system against the Plasmodium falciparuni and its vaccine development status.
 - (c) Write short notes on :
 - (i) Hypersensitivity
 - (ii) Autoimmunity
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