



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

PAPER ID : 154414

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 **10×2=20**
following :
 - (a) What do you mean by immunity? Explain the characteristics of innate and adaptive immunity.
 - (b) What are the cells and molecules of the immune system? Discuss their functions.
 - (c) What are the primary and secondary organs of the immune system? Explain them.

2. Attempt any four parts of the **5×4=20**
following :
 - (a) What are the factors affecting the immunogenicity? Explain.

- (b) What are the types of antigens? Elaborate.
 - (c) Explain the chemical nature of Haptens.
 - (d) Explain the functions of different types of Antibodies found.
 - (e) Define epitopes, adjuvants, allotypes and idiotypes with suitable example.
 - (f) What are blood group antigens?
3. Attempt any two parts of the **10×2=20**
following :
- (a) What is immune tolerance? Explain the regulation of immune system with suitable example.
 - (b) Describe the genetic organization, structure and function of human MHC molecules.
 - (c) Discuss the endogenous pathway of antigen processing and presentation pathway.
4. Attempt any two parts of the **10×2=20**
following :
- (a) Briefly describe the working principle and applications of RIA.
 - (b) Write down the procedure for production of monoclonal antibody. Also discuss its applications.
 - (c) What are the different types of vaccine? Briefly explain their preparation method along with their advantages and disadvantages.

5. Attempt any two parts of the following : **10×2=20**
- (a) Explain hypersensitivity mechanism with suitable example.
 - (b) How HIV defeats our immune system? Explain in detail.
 - (c) Write a short note on:
 - (i) Transplantation immunology
 - (ii) Autoimmunity.
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