

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

**PAPER ID : 9590**

Roll No.

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**B.Tech.**

**(SEMESTER-IV) THEORY EXAMINATION, 2012-13**

**IMMUNOLOGY**

*Time : 3 Hours ]*

*[ Total Marks : 100*

**SECTION – A**

1. Attempt **all** question parts : **10 × 2 = 20**
- (a) Name three features of the secondary immune response that distinguish it from a primary immune response.
  - (b) What is classical complement pathway ?
  - (c) What are the different T-cell receptors ? List their functions.
  - (d) What effect would removal of Bursa of Fabricius have on chickens ?
  - (e) Define antibody dependent cell mediated cytotoxicity (ADCC).
  - (f) Differentiate between Endogenous and Exogenous antigens.
  - (g) Name two autoimmune disorders.
  - (h) Write the principle of RIA.
  - (i) Which kind of lymphocytes is affected in AIDS ?
  - (j) Define Passive cutaneous anaphylaxi (PCA ).

**SECTION – B**

2. Attempt any **three** question parts : **3 × 10 = 30**
- (a) Differentiate the following :
    - (i) Innate and Adaptive Immunity
    - (ii) Antibody and B Cell receptor
  - (b) What are the types of antigens ? Elaborate.
  - (c) Write short notes on :
    - (a) Concept of immunotolerance
    - (b) Lymphorcline-activated Killer Cells



- (d) Illustrate the Hybridoma technology used for the production of Monoclonal antibodies.
- (e) Enumerate the function of immune system against tumor antigens.

### SECTION – C

Attempt **all** questions : **5 × 10 = 50**

3. Attempt any **two** parts : **2 × 5 = 10**

- (a) Give an account of Sequential and non-sequential epitopes ?
- (b) What are the factors affecting immunogenicity ? Explain.
- (c) Explain the chemical nature of Haptens.

4. Attempt any **one** part : **1 × 10 = 10**

- (a) What are primary and secondary organs of the immune system ? Explain them.
- (b) Discuss the importance of Haematopoietic microenvironment in B Cell development. Also explain negative selection process.

5. Attempt any **one** part : **1 × 10 = 10**

- (a) What is lymphocyte trafficking ? Explain the steps involved in the process of lymphocyte trafficking.
- (b) Discuss in detail about the events that occur in T cells for production of cytokines.

6. Attempt any **one** part : **1 × 10 = 10**

- (a) Describe the different immunosuppressive protocols used during transplantation programmes.
- (b) How does the breakdown of central or peripheral immunologic tolerance to self antigens contribute to the development of autoimmune diseases ?

7. Attempt any **two** parts : **2 × 5 = 10**

- (a) Enumerate the applications of Radio and double immunodiffusion.
- (b) What are the different types of antigen-antibody interactions ? Explain.
- (c) Illustrate the Western Blotting technique.