

9. (a) Discuss TATAs with example.
- (b) What is Hypersensitivity ? Classify hypersensitivity and explain the mediators of different types of hypersensitivity. Explain type-II hypersensitivity in detail. **4,12**

Roll No. ....

Total Pages : 04

**CMDQ/D-23**  
**IMMUNOLOGY**  
**BCH-302 (CBCS)**

**6548**

Time : Three Hours]

[Maximum Marks : 80

**Note :** Attempt *Five* questions in all, selecting *one* question from each Section. Q. No. 1 is compulsory. All questions carry equal marks.

**(Compulsory Question)**

1. Explain the following : **2×8=16**
- (i) Innate immunity
  - (ii) B-cell epitope
  - (iii) Endogenous antigens
  - (iv) Primary immune response
  - (v) Active Immunization
  - (vi) B-cell receptor
  - (vii) Physiological Immunosuppression
  - (viii) Primary Immunodeficiency with example.

### Section A

2. (a) Discuss the characteristic features of adaptive immune response.
- (b) Explain the killing mechanism employed by phagocytic cells.
- (c) Describe thymus as primary lymphoid organ. **4,7,5**
3. (a) Explain different types of lymphocytes and their role in immune response.
- (b) Discuss the effector functions of immunoglobulins. **10,6**

### Section B

4. (a) What are exogenous antigens ? Discuss their processing and presentation.
- (b) What are Cytokines ? Discuss their general properties and function. **8,8**
5. (a) Discuss the activation of complement system through classical Pthway. Also explain membrane attack complex (MAC).
- (b) Discuss the polymorphism of MHCs.
- (c) What is the role of MHC in transplantation ? **8,4,4**

### Section C

6. Write notes on the following : **4,4,4,4**
- (a) Somatic hypermutation
- (b) Junctional flexibility
- (c) One-turn and two-turn recognition signal sequences
- (d) Functional T-cell receptor.
7. (a) How organisation of T-cell receptor gene segments ensures expression of either of alpha-beta or gamma-delta types of receptors on T-cells.
- (b) Explain passive immunization with merits and limitation.
- (c) What is P-addition ?
- (d) Discuss N-addition. **5,5,3,3**

### Section D

8. (a) How immune system responds to bacterial infections ?
- (b) Discuss central and peripheral immunotolerance. **8,8**