

Please check whether you have got the right question paper.

- N.B:**
1. All questions are **compulsory**. Choice is internal.
 2. **Figures** to the **right** indicate **full marks**. All questions carry equal marks.
 3. **From question nos. I to IV attempt only one question out of i and ii.**
 4. **From question no.V attempt any one question of a&b, c&d, e&f and g&h.**
 5. **Draw flowcharts /diagrams wherever necessary.**

- Q.I (A)** Attempt any one out of two: **02**
- (i) Explain and give two examples of Type-II mediated hypersensitivity reaction.
 - (ii) Name the families of cytokine receptor proteins.
- Q.I (B)** Attempt any one out of two: **04**
- (i) Give an account of cytokine –related diseases.
 - (ii) Justify: Neutrophils play an early and important role in inflammation.
- Q.I (C)** Attempt any one out of two : **06**
- (i) Give the therapeutic uses of cytokines.
 - (ii) What is inflammation? How is inflammatory response beneficial to the host? How is it harmful? What is the role of histamine in inflammation?
- Q.II (A)** Attempt any one out of two: **02**
- (i) Explain how innate immunity controls most fungal infection.
 - (ii) Give experimental evidences that T-lymphocytes are involved in graft rejection.
- Q.II (B)** Attempt any one out of two : **04**
- (i) Explain how bacteria can evade host-defence mechanisms.
 - (ii) Describe antibody mediated mechanisms for combating infection by extracellular bacteria.
- Q.II (C)** Attempt any one of two : **06**
- (i) Describe immunosuppressive therapy.
 - (ii) Write a note on the clinical manifestations of graft rejection.
- Q.III (A)** Attempt any one out of two: **02**
- (i) Association of autoimmunity and T-cell receptors.
 - (ii) Role of CD₄⁺ and T-cells in autoimmunity.
- Q.III (B)** Attempt any one out of two: **04**
- (i) Write a note on HIV infection and CD₄⁺ T-cells.
 - (ii) Give the proposed mechanisms for induction of autoimmunity.

- Q.III (C) Attempt any one out of two:** **06**
- (i) Describe the mechanisms involved in activation of TH cells leading to autoimmune disease.
 - (ii) Give the mechanism of T-cell tolerance.
- Q.IV (A) Attempt any one out of two:** **02**
- (i) How HIV causes immunodeficiency? Why this infection is different from most viral infections?
 - (ii) Explain: some antigens are tumor specific.
- Q.IV (B) Attempt any one out of two :** **04**
- (i) Classify tumors of the immune system. Give an account of immune response to tumors.
 - (ii) Explain: Most tumor antigens are not unique to tumor cells.
- Q.IV (C) Attempt any one out of two:** **06**
- (i) What is reverse transcription? Explain the process of reverse transcription in HIV infection.
 - (ii) Give an account of apoptosis and necrosis in cytotoxicity.
- Q.V (a) Explain the structure of class II cytokine receptors.** **03**
- OR**
- (b) Give type IV hypersensitivity reaction with its mechanisms.** **03**
- (c) Describe microcytotoxicity test.** **03.**
- OR**
- (d) Explain: cell mediated immunity is important for viral control and clearance.** **03**
- (e) Autoimmune response in insulin dependent diabetes mellitus.** **03**
- OR**
- (f) Explain: Central tolerance limits development of autoreactive T and B cells.** **03**
- (g) Regulation of apoptosis in cancerous state** **03**
- OR**
- (h) Write a note on oncogenes.** **03**
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