

3 Hours

Marks: 75/100

N.B.: 1. **All questions are compulsory**

2. For **Paper students** each question carries **15 marks**

3. For **Research students** each question carries **20 marks**

**Q.1: (a): Justify the following (any one) :-** **7/10**

- i. Lymphoid immune –deficiencies may involve B cells, T cells or both
- ii. How immune tolerance is established and maintained

**(b): Answer the following (any one) :-** **8/10**

- i. Discuss the role of mitotic inhibitors in immunosuppressive therapy
- ii. Describe the transformation of cells to malignant cells

**Q.2: (a): Discuss the following (any one) :-** **7/10**

- i. Bioterrorism as an emerging threat
- ii. Name and discuss the principle underlying specialized epidemiologic typing techniques

**(b): Answer the following (any one) :-** **8/10**

- i. Disease surveillance
- ii. How statistics is applied in epidemiology studies

**Q.3: (a): Explain the following (any one) :-** **7/10**

- i. Use of monoclonal antibodies as therapeutic agents
- ii. Cell culture system

**(b): Give importance of the following (any one) :-** **8/10**

- i. Significance of drug delivery system
- ii. Microarray technique

**Q.4: (a): Answer the following (any one) :-** **7/10**

- i. Ethical aspects of clinical research
- ii. Different methodologies employed in clinical research

**(b): Answer the following (any one) :-**

**8/10**

- i. Recombinant Vector vaccines
- ii. Current status of HIV vaccine

**Q.5: (a): Write short notes on (any three) :-**

**12/15**

- i. Tumor antigens
- ii. Reservoirs of infection
- iii. Advances in Fluorescence Technology
- iv. Adjuvants

**(b): Explain the term (any one) :-**

**3/5**

- i. Gene therapy
- ii. Radio-pharmaceuticals

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