

(3 hours)

(Total Marks : 100)

Instructions to the candidates, if any:-

- 1) All the questions are compulsory. Choice is internal.
- 2) Figures to the right indicate full marks.
- 3) All questions carry equal marks.
- 4) Draw flowcharts /diagrams wherever necessary.

- Q1A) Fill in the blanks: (**any three**) **3**
- i) Adaptive immunity is _____ line of defence
 - ii) _____ cells are responsible for cell mediated immune response
 - iii) _____ is a primary lymphoid organ
 - iv) Kuffer cells are a type of _____
- Q1B) Define and explain **any one** of the following: **3**
- i) Effector Cells
 - ii) Passive immunity
- Q1C) Write a detailed note on **any one** : **6**
- i) Cells of immune system
 - ii) Cytokines
- Q1D) Attempt **any one**: **8**
- i) Elaborate on barriers of innate immune response.
 - ii) Discuss the different secondary lymphoid organs.
- Q2A) Fill in the blanks: (**any three**) **3**
- i) Antibodies are _____ in nature
 - ii) There are _____ types of heavy chains
 - iii) Kappa is a type of _____ chain
 - iv) The first secreted antibody is _____
- Q2B) In an antibody molecule explain the role of **any one** of the following: **3**
- i) Disulphide linkages
 - ii) Hinge region
- Q2C) Write a detailed note on **any one** : **6**
- i) Types of peptide chains in an antibody
 - ii) Factors affecting antigenicity
- Q2D) Answer **any one** of the following: **8**
- i) Discuss the mechanism of VDJ gene rearrangement
 - ii) Explain in detail with the aid of a labelled diagram the structure of an antibody.

- Q3A) Fill in the blanks: (**any three**) **3**
- i) Glycogen Storage I disorder is inherited as an autosomal _____ trait
 - ii) Thalassaemia is a defect in _____ protein
 - iii) Patients with Tay Sachs disease generally die by _____ years of age.
 - iv) In ferritin, iron is in _____ oxidation state.
- Q3B) Define and explain **any one** term: **3**
- i) Von Gierke disease (ii) Inborn error of metabolism
- Q3C) Write a short note on **any one**: **6**
- i) Thalassaemia (ii) Tay Sach's disease
- Q3D) In detail answer **any one**: **8**
- i) Discuss the causes, biochemical changes and symptoms of atherosclerosis.
 - ii) Write an informative note of sickle cell anaemia.
- Q4A) Fill in the blanks: (**any three**) **3**
- i) Cancer cells show _____ nuclear-cytoplasmic ratio.
 - ii) _____ are cancers of epithelial cells.
 - iii) The shape of cells which have lost control of cell division is generally _____.
 - iv) _____ radiations are carcinogenic.
- Q4B) Define **any one**: **3**
- i) Sarcoma
 - ii) Tumour
- Q4C) Write detailed notes on **any one**: **6**
- i) Ames Test (ii) Oncogenes
- Q4D) Answer in detail **any one**: **8**
- i) Discuss the treatment modalities that can be used for controlling cancer.
 - ii) Describe the causes of cancer.
- Q5 A) Write notes on: **16**
- i) Clonal selection theory. OR
 - i) Phagocytes. OR
 - ii) Biological functions mediated by antibodies. OR
 - ii) Digestion of antibody by pepsin OR
 - iii) Albinism OR
 - iii) Iron deficiency anaemia OR
 - iv) Cellular changes occurring in a cancer cell OR
 - iv) Malignant and benign tumours

