

12425

03 Hours / 80 Marks



0808

Seat No. 

--	--	--	--	--	--	--	--

- Instructions* –
- (1) All Questions are *Compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any EIGHT of the following: 16**

- a) Give the functions of:
  - i) Plasma Membrane
  - ii) Mitochondria
- b) What is non-reducing sugar? Give suitable examples.
- c) Define essential and non-essential amino acids.
- d) Differentiate between fats and oils.
- e) Give structure and deficiency disease of nicotinic acid.
- f) Define Anaemia. Write different types of Anaemia.
- g) Explain Epimerism with example.
- h) What are different compartments of human body where water is distributed?
- i) Define and classify vitamins.
- j) Name and explain general test for identification of Protein.
- k) Define Metabolism. What are two types of Metabolism?
- l) What is Arteriosclerosis? Give its symptoms.

**2. Attempt any FOUR of the following: 12**

- a) Define and classify proteins with example.
- b) Define the following with significance
  - i) Saponification Value
  - ii) Acid Value
- c) Draw structures of:
  - i) Maltose
  - ii) D-Glucose
  - iii) D-Fructose
- d) Write functions and deficiency of Ascorbic Acid.
- e) What is Enzyme Inhibition? Differentiate between competitive and Non-competitive inhibition.
- f) Explain water balance of healthy human body.



3. **Attempt any FOUR of the following:** 12
- Define Cell. Draw neat labelled diagram of Typical Animal Cell.
  - What are Coenzymes? Name coenzymes obtained from:
    - Vitamin B<sub>1</sub>
    - Vitamin B<sub>2</sub>
    - Vitamin B<sub>3</sub>
  - Explain in brief :
    - Mutarotation
    - Oxidation of Glucose
  - Explain role of lipid in biological system.
  - Enlist Protein Deficiency diseases. Explain any one.
  - What are Electrolytes? Explain functions of Electrolytes.
4. **Attempt any FOUR of the following:** 12
- What are Lipids? Classify lipids with example.
  - Explain different models of Enzyme action.
  - Explain Abnormal constituents of urine with their significant diseases.
  - Write deficiency diseases of calcium and potassium.
  - Explain “Cori Cycle” with its significance.
  - Define following terms:
    - Lymphocytopenia
    - Thrombocytosis
    - Polycythemia Vera
5. **Attempt any FOUR of the following:** 12
- Write six main classes of Enzymes.
  - What are “Zwitter ion”. Explain Isoelectric point of amino acid.
  - Draw structure of cholesterol. Write any 2 identification tests of cholesterol.
  - Explain Rhodopsin cycle of vision.
  - Define Homopolysaccharides. Explain the structure of starch.
  - Write deficiency diseases of following vitamins:
    - Nicotinic Acid
    - Thiamine
    - Cynocobalamine
    - Biotin
    - Riboflavin
    - Vit.K
6. **Attempt any FOUR of the following:** 16
- Define and classify carbohydrates with example.
  - Explain steps involved in Glycolysis.
  - Explain in brief Reactions involved in  $\beta$ -oxidation of fatty acids.
  - Discuss TCA cycle with its energetics.
  - Explain following factors affecting rate of Enzymic Reactions.
    - Substrate concentration
    - Temperature
  - Explain in brief secondary structure of protein.
-