

22223

3 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) Draw the structure of
 - i) Alanine
 - ii) Phenylalanine.
- b) What are lymphocytes? Give their role in health and disease.
- c) Define and classify vitamins.
- d) Give functions of Folic acid.
- e) Define:
 - i) Isoenzymes
 - ii) Constitutive enzymes
- f) Differentiate between fats and oils.
- g) Write the biological functions of protein.
- h) Define essential and non-essential fatty acids with examples.
- i) Draw neat labelled diagram of Animal cell.
- j) What are minerals? Give two biochemical functions of it.
- k) Explain Epimers and Anomers with examples.
- l) Define competitive and non-competitive enzyme inhibition.

2. Attempt any FOUR of the following:

12

- a) Define carbohydrates. Classify carbohydrates with examples.
- b) Give Pharmaceutical and therapeutic significance of enzymes.
- c) Explain the term:
 - i) Gluconeogenesis
 - ii) Glycogenolysis
 - iii) Glycogenesis
- d) Write structure, functions and deficiency symptoms of vitamin E.
- e) What are Phospholipids? Give biological importance and structure of 'Lecithin'.
- f) Explain Acid-Base behaviour of amino acids.



3. **Attempt any FOUR of the following:** 12
- Discuss the process of Transamination and Oxidative deamination in Protein catabolism.
 - What is Pathological urine? Name abnormal constituents with their significance.
 - Define and classify lipids with examples.
 - What are co-enzymes and name co-enzymes derived from different vitamins?
 - Give structures:
 - D-glucose
 - Sucrose
 - Lactose
 - Define with their significance:
 - Saponification Value
 - Acid Value
4. **Attempt any FOUR of the following:** 12
- Explain 'Lock and key model' of enzymes action and 'Induces fit model' of enzymes action.
 - Write the functions and structure of mitochondria.
 - Explain the following:
 - Pernicious anaemia
 - Scurvy
 - Give difference between reducing and non-reducing sugar.
 - Explain different protein deficiency diseases.
 - Write biochemical role and deficiency diseases of:
 - Zinc
 - Iodine
5. **Attempt any FOUR of the following:** 12
- Define enzymes. Classify them with examples.
 - How will you identify the following constituents in the given sample of urine?
 - Blood
 - Sugar
 - Ketone bodies.
 - Explain Rhodopsin cycle of vision.
 - Give structure and colour reactions of cholesterol.
 - Explain oxidation reactions of Glucose.
 - Give the following reactions of amino acids:
 - Reaction with FDNB
 - Reaction with Dansyl chloride.
6. **Attempt any FOUR of the following:** 16
- Explain the biosynthetic pathway of urea in body.
 - Give structure, physiological functions and deficiency symptoms of:
 - Niacin
 - Thiamine.
 - Explain pathway of glycolysis.
 - What are proteins? Classify them with suitable examples.
 - Explain reactions of beta-oxidation of fatty acid.
 - Explain the reactions of TCA cycle. Discuss energetic of TCA cycle.
-