

00808

**21222**

**3 Hours / 80 Marks**

Seat No.

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15 minutes extra for each hour

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- 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. Solve any EIGHT of the following :**

**2 × 8 = 16**

- (a) Define Biochemistry & Pathology.
- (b) Explain the term 'Isoelectric pH'.
- (c) Explain the term 'Mutarotation' with example.
- (d) Define the terms (any **two**) :
  - (i) Acid value
  - (ii) Iodine value
  - (iii) Acetyl value
- (e) Give diagrammatic representation of Wald's visual cycle.
- (f) Give role of minerals in life processes (any four points).
- (g) Define isoenzyme & zymogens.
- (h) Give any four functions of proteins.

00808

[2 of 4]

- (i) Give any four examples of normal constituents of urine.
- (j) Explain primary structure of proteins.
- (k) Explain Rancidity of fats.
- (l) Explain the term 'Denaturation of proteins'.

**2. Solve any FOUR of the following :**

**3 × 4 = 12**

- (a) Write functions of any three cell organelles.
- (b) Draw the structures of
  - (i) Optically inactive amino acid
  - (ii) Aromatic amino acid (any one)
  - (iii) Acidic amino acid (any one)
- (c) Explain polysaccharides in detail.
- (d) Describe functions of lipids.
- (e) Give biochemical role of Vitamin-D & Vitamin-E.
- (f) Explain conjugated proteins with examples.

**3. Solve any FOUR of the following :**

**3 × 4 = 12**

- (a) Describe Diabetes mellitus in detail.
- (b) Explain any two disorders related with lipid metabolism.
- (c) Write deficiency diseases of Vitamin-A, Vitamin-K, Vitamin-C.
- (d) Explain oxidation reactions of glucose.
- (e) Write in detail about phospholipids.
- (f) Name the Vitamin associated with following disorder :
  - (i) Egg white injury
  - (ii) Pellagra
  - (iii) Pernicious anaemia

**4. Solve any FOUR of the following :****3 × 4 = 12**

- (a) Give biochemical role of calcium, phosphorus & potassium.
- (b) Classify enzymes with examples.
- (c) Outline the steps involved in urea cycle.
- (d) Define Anaemia and explain sickle cell anaemia.
- (e) Explain dehydration in detail.
- (f) Give therapeutic & diagnostic uses of enzymes (Any three each).

**5. Solve any FOUR of the following :****3 × 4 = 12**

- (a) Name Zinborn errors of protein metabolism and explain alkaptonureia.
- (b) Write abnormal constituents of urine with their significance in diseases.
- (c) Explain Hyponatremia & Osteoporosis.
- (d) Explain effect of temperature & pH on rate of enzyme catalysed reaction.
- (e) Write note on Cholesterol.
- (f) Explain any two leucocyte disorders in detail.

**6. Solve any FOUR of the following :****4 × 4 = 16**

- (a) Explain Kreb cycle in detail.
  - (b) Explain various metabolic pathways for Carbohydrates.
  - (c) Explain glycolysis in detail.
  - (d) Explain  $\beta$ -oxidation of fatty acids in detail.
  - (e) Explain Ketosis in detail.
  - (f) Give coenzyme forms of  $\beta$ -complex group vitamins (Any eight vitamins of  $\beta$ -complex).
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