

2024

ZOOLOGY — HONOURS

Paper : CC-7

(Fundamental of Biochemistry)

Full Marks : 50

*The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*Answer **question no. 1** and **any four** questions from the rest.

1. Answer **any five** questions : 2×5
- (a) What is proton-motif force?
 - (b) Define essential amino acid with an example.
 - (c) What are deoxysugars and where they are found biologically?
 - (d) What is rancidity?
 - (e) What is iodine number?
 - (f) 'Sucrose is non-reducing sugar'.— Justify.
 - (g) State the role of pH in enzyme activity.
 - (h) What is the energy expenditure in TCA cycle?
2. (a) State two biological importance of monosaccharides.
- (b) What are the functions of following classes of enzymes :
- (i) Isomerase
 - (ii) Oxidoreductase
 - (iii) Transferase
 - (iv) Aldolase. 2+(2×4)
3. (a) Discuss with flowchart of beta-oxidation of Linoleic Acid.
- (b) Discuss the Urea cycle with flowchart. 5+5
4. Distinguish between (**any four**) : 2½×4
- (a) Transamination and Deamination
 - (b) Reducing and Non-reducing sugars

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- (c) Saturated and Unsaturated fatty acids
 - (d) Nucleoside and Nucleotide
 - (e) Function of Hexokinase and Phosphofructo kinase
 - (f) Primary and Secondary structure of protein.
5. (a) What is Isozyme? Give an example.
- (b) What is K_m ? What is its significance?
- (c) What is the effect of temperature on enzyme function? Explain graphically. (2+1)+(2+1)+(2+2)
6. (a) What is Transferase? Explain their function with example.
- (b) State the functions of Aldolase, Pyruvate Kinase and Citrate Synthase. (1+3)+(2+2+2)
7. (a) What is Saponification number? State its importance.
- (b) What is Carnitine Shuttle System?
- (c) Describe the biological importance and source of Glycogen and Cellulose. (2+1)+3+(2+2)
8. Write short notes on (*any two*) : 5×2
- (a) Lineweaver Burk plot
 - (b) Salvage Pathway of Pyrimidine
 - (c) Pentose Phosphate Pathway
 - (d) Isomerism of Monosaccharides.
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