

2022

ZOOLOGY — HONOURS

Paper : CC-7

(Fundamentals 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** from the rest.

1. Answer **any five** questions : 2×5
- (a) Define essential amino acid with two examples.
  - (b) State the sources of NADPH during fatty acid synthesis.
  - (c) Define anomerism.
  - (d) State the role of temperature on enzyme activity.
  - (e) State the function of hexokinase and phosphofructokinase.
  - (f) What is proton-motif force?
2. (a) Explain briefly the purine salvage pathway.
- (b) Write a note on oxidative deamination.
- (c) Define isozyme with example. 5+3+2
3. (a) Distinguish between :
- (i) Nucleoside and nucleotide
  - (ii) Saturated and unsaturated fatty acid
  - (iii) Glycosidic linkage and peptide linkage.
- (b) Define glucogenic and ketogenic amino acids with example. (2×3)+(2+2)
4. (a) Define  $K_m$  with significance.
- (b) Explain competitive and non-competitive inhibition.
- (c) Give an example of a competitive inhibitor. (2+2)+(2½+2½)+1
5. (a) Discuss with a flow chart of the process of  $\beta$ -oxidation of linoleic acid.
- (b) Describe urea cycle with a flow chart. 5+5

**Please Turn Over**

6. (a) What is redox potential?
- (b) What are the functions of the following classes of enzymes? Give example :
- (i) isomerase
  - (ii) oxido-reductase
  - (iii) transferases.
- (c) Define oxidative phosphorylation. 2+(2×3)+2
7. State the functions of the following enzymes : 2×5
- (a) Transketolase
  - (b) Aldolase
  - (c) Pyruvate kinase
  - (d) Palmitoyl thio-esterase
  - (e) Citrate synthase.
8. Write short notes on (*any two*) : 5×2
- (a) Salting out of protein
  - (b) Electron transport chain
  - (c) Pentose phosphate pathway (structure not required)
  - (d)  $F_0 - F_1$  particle.
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