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 Km 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 β-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.