Total number of printed pages–4

3 (Sem–4/CBCS) ZOO HC 3

2023

ZOOLOGY

(Honours Core)

Paper : ZOO–HC–4036

(Biochemistry of Metabolic Processes)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Fill in the blanks : 1×7=7

   (a) Adipose cells are the major site of accumulation of _____.

   (b) Lactate and alanine are the major raw materials of _____.

   (c) Human erythrocytes contain no _____.

   (d) Gluconeogenesis and Glycolysis are _____ regulated.

Contd.

(e) The compound in urine responsible for the color reactions was identified as _____.

(f) _____ is the precursor for steroid hormones such as progesterone, testosterone etc.

(g) Degradative processes are termed as _____.

2. Answer the following briefly : 2×4=8

(a) What are triacylglycerols ?

(b) State *two* physiological roles of fatty acids.

(c) How liver maintains a constant level of glucose in the blood ?

(d) Define oxidation and reduction.

3. Answer the following : ***(any three)*** 5×3=15

(a) Define glycolysis and gluconeogenesis. State the enzymatic differences between glycolysis and gluconeogenesis.

(b) Describe ureotelic, uricotelic and ammonotelic animals.

(c) What is oxidative phosphorylation ? Write a note on the significance of the ADP-ATP high energy cycle.

(d) Discuss aerobic and anaerobic hydrogen transfer reaction. Compare the energy yield of the *two* processes.

(e) Describe catabolism and anabolism.

4. (a) What is glycolysis ? Give an account on the different steps in the glycolytic pathway along with its energetics. 2+6+2=10

Or

(b) What is Citric Acid Cycle or TCA ? Explain the various steps of citric acid cycle along with its energetics. 2+6+2=10

5. (a) What are Ketone bodies ? Under what circumstances are they formed in the body ? Write a note on the consequences of Ketosis. 2+3+5=10

Or

(b) Give an account of the ornithine cycle of urea synthesis in animals. 10

6. *(a)* Explain Cori's cycle with a schematic diagram. Add a note on its significance. 3+2+5=10

Or

(b) What is deamination ? Describe the glucogenic and ketogenic amino acids and their deamination. 2+8=10
