

6. (a) Describe the process of  $\beta$ -oxidation of saturated fatty acid with even number of carbon atoms along with its energetics. 8+2=10

Or

(b) What is transamination? Describe the mechanism and significance of transamination. How does it differ from deamination? 1+6+2+1=10

8+2=10

(b) Describe the pentose phosphate pathway to yield NADPH. Mention its significance. 8+3=8

(b) Give an account of urea cycle. Why this cycle is called an amphibipolar pathway? 8+2=10

(b) What are various complexes of Electron Transport System? Describe the flow of electrons through the complexes. 10+4=14

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2024

ZOOLOGY

(Honours Core)

Paper : ZOO-HC-4036

(Biochemistry of Metabolic Processes)

Time : Three hours

Full Marks : 60

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

1. Answer the following questions : 1×7=7

- (a) What are aquaporins ?
- (b) Which shuttle mechanism is used in the cells of skeletal muscle and brain ?
- (c) ATP is a coenzyme/ isozyme/ apoenzyme. (Choose the correct option)
- (d) The major site of gluconeogenesis is \_\_\_\_\_ . (Fill in the blank)

(e) Palmitic acid is straight chain saturated fatty acid. (True/ False)

(f) Give an example of glucogenic amino acid.

(g) The inner mitochondrial membrane is impermeable to  $H^+$  ions/ $OH^+$  ions /  $K^+$  ions. (Choose the correct option)

2. Answer the following questions briefly :

2×4=8

(a) Differentiate between anabolism and catabolism.

(b) Define substrate level phosphorylation with example.

(c) Write the significance of urea cycle.

(d) Why is acetyl-CoA called as a key metabolite precursor ?

3. Answer the following questions : (any three)

5×3=15

(a) What is shuttle system ? Describe the malate aspartate shuttle system.

(b) Give an account of ketogenesis and its regulation.

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