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4 SEM TDC ZOOH (CBCS) C 10

2023

(May/June)

ZOOLOGY

(Core)

Paper : C-10

(**Biochemistry of Metabolic Process**)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

1. Fill in the blanks : 1×5=5

(a) Oxidative phosphorylation takes place
in _____.

(b) Ammonia for urea formation is derived
from _____ acid.

(c) Reverse process of glycogenesis is
_____.

(2)

(d) The final electron acceptor in Electron Transport Chain is _____.

(e) In glycolysis number of ATPs produced (Net) from a glucose is _____.

2. Write short notes on (any two) : $4 \times 2 = 8$

(a) Urea cycle

(b) Ketogenesis

(c) Pyruvate dehydrogenase complex

(d) Carnitine acyl transferases

3. Write and complete reactions catalysed by the following enzymes : $2 \times 5 = 10$

(a) Fatty acyl-CoA synthetase

(b) Acetyl-CoA carboxylase

(c) Glycogen phosphorylase

(d) Pyruvate carboxylase

(e) Lactate dehydrogenase

Or

Describe the process of palmitic acid biosynthesis. Write a note on the structure of fatty acid synthetase molecule. $6 + 4 = 10$

(3)

4. Distinguish between (any three) : $4 \times 3 = 12$

(a) Substrate level and oxidative phosphorylation

(b) Transamination and oxidative deamination

(c) Glycolysis and gluconeogenesis

(d) β -oxidation in mitochondria and peroxisome

(e) Glycogenesis and glycogenolysis

(f) NADH and NADPH

5. What is glycolysis? Give an outline of glycolytic reactions including enzymes, coenzymes etc. $1 + 8 = 9$

Or

Write the reactions of Krebs' cycle with special reference to the oxidative steps and their products. Mention the number of ATPs produced from a pyruvic acid molecule in the cycle. $7 + 2 = 9$

6. What is chemiosmosis? Describe how electron transfer in the respiratory chain is couple with ATP synthesis. $3 + 6 = 9$

Or

Draw a labelled diagram to display the respiratory chain. Write a note on Adenine nucleotide and phosphate translocase. $3 + 6 = 9$
