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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 \_\_\_\_.

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**( Turn Over )**



( 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.  $6 + 4 = 10$

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( Continued )

( 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)  $\beta$ -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.  $3 + 6 = 9$

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