

M.Sc. ZOOLOGY
THIRD SEMESTER
ANIMAL PHYSIOLOGY AND BIOCHEMISTRY-I
MSZ-303 E

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

Time: 15 mins.

(Objective)

Marks: 10

Choose the correct answer from the following:

1×10=10

- In secondary structure turns are formed by a regular pattern of hydrogen bond formed between N-H and.....
 - C-O
 - C=O
 - C=C
 - C-C
- Which of the following disease is caused due to protein misfolding?
 - Alzheimer disease
 - Cystic fibrosis
 - Both a and b
 - None of the above
- In which of these process protein aggregates are formed?
 - Denaturation
 - Folding
 - Renaturation
 - Synthesis
- Select the partial equation that is found during derivation of Michelis-Menten equation.
 - $K_m = V (Et)$
 - $V = K(Et)$
 - $V_{max} = K(Et)$
 - None of these
- Select the high energy phosphate molecule of the muscle.
 - AMP
 - Creatine phosphate
 - Magnesium phosphate
 - None
- Which one is correct for K_m ?
 - Equal to $[S]$ when initial rate is equal to $\frac{1}{2} V_{max}$
 - Depends upon concentration of E
 - It is not related to ES complex
 - All of these
- Hydrogen ion is the activator of enzyme:
 - Amylase
 - Trypsin
 - Pepsin
 - Lipase
- The most prevalent metalloporphyrin in human is:
 - Heam
 - Ach
 - Acetylc CoA
 - Carbamyl
- The intermediate form of intermediary metabolism is:
 - Metabolic pathway
 - Acetyl CoA
 - Catabolic pathway
 - None of these

10. Precursor molecules like amino acid, sugar and fatty acid converted to cell macromolecules like protein polysaccharide and lipid. This reaction is termed as:
- a. Convergent reaction
 - b. Divergent reaction
 - c. Cyclic Reaction
 - d. None

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(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

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|---|----------|
| 1. Why a cell adopts pentose phosphate pathway? Explain various reaction steps of HMP pathway. | 2+3=5 |
| 2. What is protein denaturation? What are the various denaturation? Describe the denaturation and renaturation of Ribonuclease A. | 2+3+5=10 |
| 3. Write notes on <i>any two</i> of the following:
a) First and second law of thermodynamics
b) Synthesis and hydrolysis of ATP
c) Line Weaver-Burk plot | 10 |
| 4. Define Catabolic, Anabolic and Amphibolic reaction. What is intermediary metabolism? Describe with proper diagram. | 3+4+3=10 |
| 5. Write different mechanism of action of enzymes on bi-substrate and multi-substrate reaction. Add note on enzyme inhibition process. | 5+5=10 |

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