

M.Sc. ZOOLOGY
THIRD SEMESTER [SPECIAL REPEAT]
CELL AND MOLECULAR BIOLOGY-I
MSZ-303 A

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

- The Na⁺K⁺ ATPase pump is an example of:
 - P-pump
 - V-pump
 - F-pump
 - ABC transporter
- Glucose transportation in RBC takes place by:
 - Osmosis
 - Active transport
 - Secondary active transport
 - Passive transport
- Which of the following kinds of molecules are allowed to pass through the plasma membrane by simple diffusion?
 - Nonpolar molecules
 - Small polar molecules
 - Ions
 - Drugs
- Which of the following process requires membrane proteins?
 - Pinocytosis
 - Phagocytosis
 - Exocytosis
 - Receptor mediated endocytosis
- What is the function of tight junctions in epithelial cells?
 - Separation of fluids
 - Biocatalyst to enzymes
 - Protection
 - Support and structure
- Mitochondrial genome for animals averages for aboutbase pairs in length.
 - 16000
 - 2000
 - 17000
 - 10000
- Promoter is a.....
 - Gene
 - Site on DNA
 - Site on RNA
 - Toxin
- The full range of mRNA molecules expressed by an organism is called:
 - Genome
 - Proteome
 - Transcriptome
 - Genes
- International Human Genome project was initiated by:
 - National Institute of Health (NIH)
 - Celera Genomics
 - US Department of Energy
 - All of the above

10. In the process of lipid peroxidation, free radicals mostly damages following type of lipids:
- a. Phospholipids
 - b. Ceramide
 - c. Sphingomyeline
 - d. Cholesterol

(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

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

1. Discuss any two types of cell to cell interactions with diagram. 5
2. Define proteome. How do they differ from that of transcriptome? 2+4+4=10
How do they could be identified?
3. Discuss the different types of active transport taking place in plasma membrane. What are the factors of membrane fluidity? 8+2=10
4. Define mitochondrial genome. Explain the relationship between mitochondrial genome and nuclear genome. 2+8=10
5. Explain with proper diagrams about the different types of membrane proteins. What are the different classes of lipids found in the plasma membrane? 5+5=10

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