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63 (FY)SEM-1/MIN/ZOOMIN1014

2025

ZOOLOGY

(MINOR)

Paper : ZOOMIN1014

(Cell and Molecular Biology)

Full Marks : 50

Pass Marks : 20

Time : Two hours

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

1. Choose the correct answers : 1×5=5

(a) Who discovered cell ?

(i) Matthias Schleiden

(ii) Robert Hooke

(iii) Rudlof Virchow

(iv) Theodor Schwann

(b) The Sandwich Model of plasma membrane was proposed by :

- (i) J. D. Robertson
- (ii) Davson-Danielli
- (iii) S. J. Singer and Garth L. Nicholson
- (iv) Theodor Schwann

(c) Smooth Endoplasmic Reticulum is concerned with :

- (i) Protein synthesis
- (ii) Lipid synthesis
- (iii) DNA synthesis
- (iv) Carbohydrate synthesis

(d) Function of Golgi Bodies is to :

- (i) Digest various biomolecules
- (ii) Modifies proteins received from the endoplasmic reticulum
- (iii) Take part in protein synthesis
- (iv) Synthesizes energy

(e) Function of cAMP.

- (i) Activation of Protein Kinase A.
- (ii) Gene Expression Regulation
- (iii) Signal Transduction
- (iv) All of the above

2. Answer the following questions : **(any five)**
2×5=10

- (a) What are Prions ?
- (b) Function of Rough endoplasmic Reticulum.
- (c) What are giant chromosomes? What are its types ?
- (d) Why the replication of DNA is called semi conservative ?
- (e) What is transcription ?
- (f) Write the functions of Polymerase in DNA replication.
- (g) Mention the sub-units of prokaryotic ribosomes.

3. Answer the following questions : **(any five)**
5×5=25

- (a) Distinguish between Prokaryotic Cells and Eukaryotic Cells.
- (b) State the principles of Cell theory.
- (c) Distinguish between Active Transport and Passive Transport.
- (d) Different types of chromosomes based on the position of centromeres.
- (e) Describe the structure of Euchromatin.
- (f) Describe *three* important signaling molecules.
- (g) What are endocytosis and exocytosis?
- (h) Write a short note on viroids.

4. Answer the following questions : **(any one)**
1×10=10

- (a) What is Passive Transport? Discuss the different types of passive transport through plasma membrane. 1+9=10
- (b) What is DNA replication? Describe the mechanism of DNA replication.

1+9=10