

Total No. of Printed Pages—3

2 SEM TDC ZOOH (CBCS) C 4

2026

(May/June)

ZOOLOGY

(Core)

Paper : C-4

(**Cell Biology**)

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) _____ is called the powerhouse of the cell.
- (b) The main function of peroxisomes is _____ metabolism.
- (c) Crossing over occurs in _____ phase of Meiosis I.
- (d) _____ is an example of second messenger.
- (e) _____ is a cell organelle that involves in the synthesis of phospholipids.

(2)

2. Write short notes on any two of the following : $3 \times 2 = 6$

(a) Secondary messenger

(b) Lysosomes

(c) Heterochromatin

(d) Viroids

3. Discuss the various models of the plasma membrane with suitable illustrations. 7

Or

Compare the structures and functions of tight junctions and gap junctions with suitable diagrams.

4. Describe the structure and function of endoplasmic reticulum. $4 + 3 = 7$

Or

What is Golgi body? Discuss its role inside a cell. $2 + 5 = 7$

5. Explain the structure and function of microtubules in eukaryotic cell. $5 + 2 = 7$

Or

What are microfilaments? Compare the structures of microfilaments and intermediate filaments. $1 + 6 = 7$

(3)

6. Discuss why mitochondria is called semiautonomous organelle. Write in brief about the endosymbiotic hypothesis. $3 + 4 = 7$

Or

Explain the mitochondrial electron transport chain with a suitable diagram. $5 + 2 = 7$

7. Discuss the structure of nucleosome in eukaryotic cell with suitable diagram. 7

Or

Explain the structures of nuclear envelope, nuclear pore complex and nucleolus in eukaryotic cell. $3 + 3 + 1 = 7$

8. Explain briefly about the stages and events of cell cycle. Write the differences between mitosis and meiosis. $4 + 3 = 7$

Or

What is GPCR? Explain the structure of GPCR with suitable diagram. $1 + 5 + 1 = 7$
