Total No. of Printed Pages—3

2 SEM TDC ZOOH (CBCS) C 3

2026

(May/June)

ZOOLOGY

(Core)

Paper : C–3

(Non-Chordates—II)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

Central Library & Information Centre Cachar College Date .....

The figures in the margin indicate full marks for the questions

1. Fill in the blanks (any *seven*) : 1×7=7

(a) The coelom formed by splitting of mesoderm is called _____ coelom.

(b) In _____ metamerism, all body segments are similar in structure.

(c) The excretory organs of annelids are called _____.

(d) The body of arthropods is covered by a _____ exoskeleton.

(e) _____ is considered as a connecting link between Annelida and Arthropoda.

(f) The body of Mollusca is divided into head, foot and _____.

(g) Adult echinoderms exhibit _____ symmetry.

(h) The water vascular system is the characteristic of phylum _____.

2. Write short notes on any *three* of the following : 4×3=12

(a) Evolution of coelom

(b) Respiration in Mollusca

(c) Evolutionary significance of Onychophora

(d) Salient features of phylum Annelida

3. Distinguish between any *three* of the following : 4×3=12

(a) Torsion and Detorsion in Mollusca

(b) Aquatic respiration and Terrestrial respiration in Arthropoda

(c) Septal nephridia and Pharyngeal nephridia

(d) Beehive and Termitarium

(e) Metamerism in Annelida and Metamerism in Arthropoda

4. Describe the characteristic features of phylum Echinodermata. 4

Or

Describe the characteristic features of phylum Arthropoda.

5. Discuss the social life of honeybees with special reference to caste system and division of labour. 6

Or

Classify the phylum Echinodermata up to class with examples.

6. What is metamorphosis in insects? Explain in detail the different types of metamorphosis in insects with suitable examples. 1+5=6

Or

Explain the process of pearl formation in Mollusca. 6

7. Give an account of the larval forms in echinoderms and mention their characteristic features. 6

Or

Discuss the mechanism of excretion in Annelida with examples.

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Total No. of Printed Pages—3

2 SEM TDC ZOOH (CBCS) C 4

2026

(May/June)

ZOOLOGY

(Core)

Paper : C–4

(Cell Biology)

Central Library & Information Centre
Date .....

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. Write short notes on any *two* of the following : 3×2=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

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

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