

2025

**ZOOLOGY — MDC**

**Paper : CC-4**

**(Non-Chordate Structure and Function)**

**Full Marks : 75**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**Section – A**

1. Answer **any ten** questions :

2×10

- (a) Write the location and function of contractile vacuoles.
- (b) State two characters of insects.
- (c) What is binary fission? Give an example.
- (d) What is pseudocoelom? Give an example.
- (e) What are the significance of spicules?
- (f) What is metagenesis?
- (g) Write the scientific name of one solitary and one colonial coral.
- (h) Write two special features of the digestive system in *Fasciola hepatica*.
- (i) Compare and contrast septal and integumentary nephridia in annelids.
- (j) Write one annelid and one arthropod feature of *Peripatus* sp.
- (k) Write the location and function of green glands in *Macrobrachium* sp.
- (l) Why is *Pila* considered an amphibious mollusc?
- (m) State two identifying characters of Cnidaria.
- (n) Name any two echinoderm larvae.
- (o) Write the differences between male and female *Ascaris* sp.

**Section – B**

2. Write notes on **any three** :

5×3

- (a) Role of microfilaments in amoeboid movement
- (b) Evolutionary significance of *Peripatus*
- (c) Conservation of coral reefs in India

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- (d) Excretory system of *Ascaris* sp.  
 (e) Nervous system of *Pila* sp.

### Section – C

Answer **any four** questions.

3. Write the systematic positions upto class of the following animals (**any five**) : 2×5
- |                            |                            |
|----------------------------|----------------------------|
| (a) <i>Spongilla</i> sp.   | (b) <i>Obelia</i> sp.      |
| (c) <i>Dugesia</i> sp.     | (d) <i>Taenia</i> sp.      |
| (e) <i>Hirudinaria</i> sp. | (f) <i>Periplaneta</i> sp. |
| (g) <i>Loligo</i> sp.      | (h) <i>Antedon</i> sp.     |
4. (a) Elucidate the ultrastructure of a flagellum in *Euglena* with suitable diagram.  
 (b) Write a note on formation of coral reefs. (4+2)+4
5. (a) With diagram explain conjugation in *Paramoecium*.  
 (b) Give a brief account of polymorphism in Siphonophora. 5+5
6. Distinguish (**any five**) : 2×5
- |  |
|--|
| (a) Cilia / Flagella                     |
| (b) Star fish / Silver fish              |
| (c) Fringing reef / Barrier reef         |
| (d) Radial symmetry / Bilateral symmetry |
| (e) Protostomia / Deuterostomia          |
| (f) Polychaeta / Oligochaeta             |
| (g) Notochord / Stomochord.              |
7. (a) Give a brief account of syconoid canal system.  
 (b) Elucidate the respiratory system of *Macrobrachium* with diagram. 6+4
8. (a) Write about the evolutionary and functional significance of metamerism in annelida.  
 (b) Describe the morphological feature of *Balanoglossus* sp. 6+4
9. (a) Elucidate the water vascular system of *Asterias* sp.  
 (b) Write the effects of torsion in gastropoda.  
 (c) Write two features of bipinnaria larva. 5+3+2
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