

2021

ZOOLOGY — HONOURS

Paper : CC-3

(Non-Chordate II)

Full Marks : 50

*The figures in the margin indicate full marks.*

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

Answer **any ten** questions.

1. (a) Define coelom.  
(b) Write the differences between acoelomates and pseudocoelomates with example.  
(c) What is the significance of coelom? 1+(2+1)+1
2. (a) What is chloragogen cells?  
(b) Write the main excretory product of earthworm.  
(c) Describe in brief about the excretory mechanism in earthworm. 1+1+3
3. Distinguish between metamerism and pseudometamerism. Describe the types of metamerism found in annelids with examples. 1+4
4. Write the name and two important characteristic features of the class to which each of the following animals belong : 1×5
  - (a) *Palaemon* sp.
  - (b) *Julus* sp.
  - (c) *Periplaneta* sp.
  - (d) *Limulus* sp.
  - (e) *Peripatus* sp.
5. (a) What is metamorphosis?  
(b) Distinguish between holometabolous and hemimetabolous insects citing one example of each.  
(c) Comment on the role of prothoracicotropic hormone in Lepidoptera. 1+2+2
6. (a) State the typical features of *Peripatus* sp.  
(b) Why *Peripatus* is considered as a connecting link between annelids and arthropods? 2+3

**Please Turn Over**

7. (a) Write down the characteristics of class Holothuroidea with example.  
(b) What are the different parts of water vascular system in Echinodermata and their functions? 2+3
8. (a) Distinguish class Insecta and Arachnida.  
(b) Mention the unique feature of tracheal respiration in *Periplaneta* sp. 2+3
9. What is the structural unit of the eye in cockroach? Explain it with suitable diagram. 1+(2+2)
10. Write a short note on the fertile castes of termites. What is the role of nasutes in the colony? What happens if the queen is removed from a termite colony? 3+1+1
11. (a) Why is *Pila* considered as an amphibious animal?  
(b) Explain how radula helps in feeding in *Pila*.  
(c) What is monopectinate gill? 2+2+1
12. (a) Explain gonocoel theory with suitable diagram.  
(b) Differentiate ophiopluteus and echinopluteus. 3+2
13. Define Torsion. Describe the effect of torsion on the nervous system of *Pila* with suitable diagram. 1+4
14. (a) What is Aristotle's lantern?  
(b) Write the systematic position up to class of **any two** of the following animals :  
(i) Sea hare, (ii) Silver fish, (iii) Cuttle fish. 1+(2×2)
15. (a) Why *Balanoglossus* is considered as an invertebrate chordate?  
(b) Describe the mode of feeding and digestion in *Balanoglossus* sp. 1+2+2
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