

2017

ZOOLOGY

[Honours]

PAPER – I

Full Marks : 90

Time : 4 hours

The figures in the right hand margin indicate marks

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

Illustrate the answers wherever necessary

GROUP – A

Answer two questions from the following : 15 × 2

1. (a) Distinguish between :
 - (i) Errantia and sedentaria
 - (ii) Monogenea and Digenea

(Turn Over)

- (iii) Cytostome and cytopyge
- (iv) Schizocoel and enterocoel.
- (b) Justify the systematic position of *Peripatus* with reasons. $(2 \times 4) + 7$
2. (a) Name phylum and classes in which the following larval forms are found : 2×4
- (i) Trochophore
- (ii) Pluteus
- (iii) Veliger
- (iv) Nauplius.
- (b) Classify different types of feathers with proper diagram. State various functions of feathers. $4 + 3$
3. (a) Name the phylum which shows only cellular grade of organization. Write two important differences between water canal system and water vascular system. Describe ascon type water canal system with suitable diagram and course of circulation.

(b) Classify different types of spicules in porifera. Write functions of choanocyte, porocyte and pinacocyte.

[1 + 2 + (4 + 2)] + [3 + 3]

4. (a) Define Coral. What is coral reef? Describe different theories of coral reef formation. Write significance of coral reef with major threats.

(b) How bat performs its ecolocation? How you can distinguish macrochiroptera and microchiroptera? (1 + 1 + 5 + 2 + 2) + (3 + 1)

5. (a) Mention the classes of the following animals with definite reasons :

2 × 4

(i) *Catla* sp.

(ii) *Rana* sp.

(iii) *Hemidactylus* sp.

(iv) *Macropus* sp.

(b) Define primary and secondary host with examples. Describe life cycle of liver fluke with suitable word diagram.

2 + 5

(4)

GROUP – B

Answer five questions from the following : 8×5

6. State the location and functions of Mehlis's gland and vitelline gland. $4 + 4$
7. (a) With the help of suitable diagram describe briefly the process of conjugation in *Paramecium* sp.
- (b) What is trachea ? How it differs from book lung ? $5 + 1 + 2$
8. Mention the location and function of the following : 2×4
- (i) Choanocytes
- (ii) Culloblast cell
- (iii) Tiedemann's body
- (iv) Notopodium.
9. (a) How birds locate their migratory routes ?
- (b) Enumerate the role of microfilaments in movement of *Amoeba* sp. $4 + 4$

10. State systematic position (upto class) of *four* of the following and justify your answer by giving at least 2 diagnostic characters of each taxonomic category and give suitable examples : 2 × 4

- (a) Cuttle fish
- (b) Sea urchine
- (c) Sea hare
- (d) Sea lemon
- (e) Sea feather
- (f) Sea far
- (g) Sea walnut.

11. Place following (any *four*) into their respective class, sub-class, and order with reasons mentioning at least two characters for each taxonomic category (Amphibia and Reptilia upto order; upto sub-class for the rest) : 2 × 4

- (a) Sea horse
- (b) *Sea cow*
- (c) Cat fish

- (d) Ichthyophis
- (e) Dog fish
- (f) Kingfisher.

12. Name the class of chordate which are (i) amniotes and anamniotes (ii) monocondylic and dicondylic skull (iii) procoelus and acoelus centrum (iv) pronephric and metanephric kidney (v) heterodont and homodont teeth (vi) single circuit and double circuit heart (vii) dry scale and moist scale (viii) cold and warm blooded. 1×8
13. Define 'torsion'. Describe the type of torsion that occur in *Pila* sp. with proper diagram. Write advantages and disadvantages of torsion. 8
14. Define aortic arch. State comparative modification of aortic arches in man, frog and ligard with diagram. $2 + (3 \times 2)$

GROUP – C

Answer five questions from the following: 4×5

15. Distinguish between Wolffian and Müllerian duct. $2 + 2$

16. State the origin and distribution of VIIth and Xth cranial nerves in *Cavia* sp. 2 + 2
17. Distinguish between : 2 + 2
- (i) Larva and Nymph
 - (ii) Holozoic and Saprozoic nutrition.
18. Explain urcotelism and uricotelism. 2 + 2
19. Distinguish between : 2 × 2
- (a) Chelonea and Crocodilea
 - (b) Polyp and Medusa.
20. (a) What exact location and function of anal style and anal cerci. 2 × 2
- (b) Write basic difference between alternation of generation and metagenesis. 2 × 2
21. Write eight basic differences between ratitae and carinatae. 4
22. Give the distribution (example) with function : 1 × 4
- (a) Jacobson's organ

- (b) Clasper
- (c) Mantle membrane
- (d) Ommatidium.

23. State anatomical location of the following : $\frac{1}{2} \times 8$

- (a) Foramen of Panizza
 - (b) Foramen of Ovalae
 - (c) Foramen of Monro
 - (d) Foramen of Magnum
 - (e) Ink gland
 - (f) Red gland
 - (g) Tideman's body
 - (h) Pinacocyte.
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