

2019

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 any two questions of the following : 15 × 2

1. (a) What is macro nucleus ? Describe the process of conjugation in *Paramecium* sp. and its importance.

(Turn Over)

- (b) What is phagocytosis ? Describe the process of ingestion in *Amoeba* sp. (2 + 6) + (2 + 5)
2. Differentiate between alternation of generation and metagenesis. Describe polymorphism in siphonophores with necessary diagram. State the evolutionary significance of polymorphism. Add a note on the significance of cridoblast and coloblast cell. 2 + 7 + 3 + 3
3. (a) State the function of Flem cell. Describe the structures involved in the aquatic mode of respiration of prawn and describe its mode of action.
- (b) "The classification of phylum porifera is based on spicute" – Justify the statement. Classify porifera up to class with example. (1 + 8) + (2 + 4)
4. (a) Describe with suitable diagram :
- (i) Structure of poison gland of a snake
 - (ii) Structure of different types of fangs
 - (iii) Flow chart of biting mechanism.

(b) State the different types of snake venomes and state their mode of action. $(4 \times 3) + 3$

5. Write unique features of the taxonomic groups (any five) : $(5 \times 2) + 5$

(a) Apoda,

(b) Annura

(c) Ophidia

(d) Cephalochordata

(e) Cyclostomata

(f) Urochordata

(g) Cetacea.

State two Avesan and two Reptilian characters of *Archopterix*.

6. State the function of Gill. What is ARO ? Describe different types of ARO in fish. Differentiate lung fish from that of Amphibia. $2 + 1 + 8 + 4$

GROUP – B

Answer any **five** questions : 8 × 5

7. Why aortic arches are reduced in higher vertebrates ? Describe the modification of Aortic arches in fish, amphibia and mammals, with diagram. 3 + 5
8. State the systematic position (upto class) of any *four* of the following and justify your answer : 2 × 4
- (a) *Obelia* sp.
 - (b) *Loligo* sp.
 - (c) *Periplaneta* sp.
 - (d) *Hirudinaria* sp.
 - (e) *Asterias* sp.
 - (f) *Neris* sp.
9. What is Harmaphordite ? Give the life cycle of *Ascaris* sp. (only word diagram). 2 + 6

10. What is suctorial and non-suctorial tube feet ?
Briefly describe the water vascular system in *Asterias* sp. with suitable diagram. 2 + 6
11. Describe the anatomical particularities of *Balanoglossus*. Justify the inclusion of *Balanoglossus* under non-chordata. 5 + 3
12. State the function of the following (any four) : 2 × 4
- (a) Spermathaeca
 - (b) Conglobet gland
 - (c) Elytra
 - (d) Green gland
 - (e) Food vacuole
 - (f) Psudopodia.
13. Write down the systematic position upto order with reason mentioning at least two characters for each taxonomic group (any four) : 2 × 4

(i) *Tylototriton* sp.

(ii) *Sphenodon* sp.

(iii) *Pavo* sp.

(iv) *Panthera* sp.

(v) *Cavia* sp.

(vi) *Ichthyophis* sp.

14. Write the distribution and anatomical particularities of Dipnoi, write a note on the phylogeny of Depnoi. 1 + 3 + 4

GROUP – C

Answer any **five** of the following : 4 × 5

15. Classify animals depending upon coelome. 4
16. Write the functions of : Radula, Mantle, Omatidium, Organ of Jacobson. 4
17. Mention the difference between : 2 + 2
- (a) Parazoa and Enterozoa
- (b) Connective and Commissure.

18. Differentiate between : 2 + 2
- (a) Scale of reptile and scale of fish
- (b) Wing feather and down feather.
19. Write the names and distribution of Vth, VIIth, IXth and Xth cranial nerves of *Cavia* sp. 4
20. What is canal system ? State its function. 2 + 2
21. What is Anal style ? Where it is located ? State the function of Anal cerci. 1 + 1 + 2
22. What is Endostyle ? What is spiracle ? 2 + 2
23. Differentiate ratities and carinaties. 4
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