

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Zoology - Core

COMPARATIVE ANATOMY OF VERTEBRATES

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer.

1. The main characteristics of chordates are exhibited by _____
(a) Tadpole (b) Ascidian Tadpole
(c) Cyst (d) None
2. Select the first true vertebrate.
(a) amphioxus (b) ostracoderms
(c) ascidian (d) petromyzon

8. Choose the number of vertebra present in Rabbit is _____
(a) 65 (b) 45
(c) 85 (d) 10
9. Select the animal which has the smallest brain in chordate.
(a) fish (b) amphioxus
(c) amphibians (d) cyclostomes
10. Which is responsible for an instinctive and stereotypic behavior of bird?
(a) beaks (b) feathers
(c) basal nucleus (d) pallium
11. The subphylum rochordata includes protochordates that are commonly known as _____
(a) lancelets (b) hagfish
(c) sea squirts (d) tunicates
12. Choose the derivatives of epidermis.
(a) nails (b) stomach
(c) intestine (d) all the above

3. Name the Outermost layer of the skin, which is responsible for providing a protective barrier.
(a) Epidermis (b) Dermis
(c) Hypodermis (d) Sebaceous layer
4. Tell the Claws and nails are modified forms of
(a) Teeth (b) Scales
(c) Feathers (d) Horns
5. Choose the animals which has four chambered heart.
(a) Crocodiles and Mammals
(b) Dipnoi
(c) Cyclostomes
(d) Reptiles
6. Tell the respiratory organ of Dipnoi
(a) opercular lungs
(b) intestine
(c) gills
(d) lungs
7. Choose one of the modified types of autostylic jaw suspension.
(a) craniostylic (b) methostylic
(c) amphistylic (d) autodiastylic

13. The number of chambers present in the heart of fish is
(a) 3 (b) 4
(c) 2 (d) 1
14. Which group of vertebrates has retained the notochord as the primary structural element of their vertebral column throughout their life?
(a) fish (b) mammals
(c) birds (d) amphibians
15. The lateral line system in fish and aquatic amphibians are responsible for detecting
(a) odors
(b) temperature
(c) pressure and vibrations
(d) taste

PART B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b)

16. (a) Discuss the origin of Vertebrates.
Or
(b) Write the characteristics of chordates.

17. (a) Discuss the different types of horns.

Or

(b) Elaborate the dermal derivatives.

18. (a) Explain the external respiration.

Or

(b) Discuss the aortic arches of Amphioxus.

19. (a) Explain the functions of Vertebral column.

Or

(b) Write down the comparison of hind limbs.

20. (a) Discuss any one larval forms of free living invertebrates.

Or

(b) Explain the cranial nerves.

PART C — (5 × 8 = 40 marks)

Answer ALL the questions. Choose either (a) or (b)

21. (a) Discuss the importance of the study of vertebrate morphology.

Or

(b) Elaborate the concept of protochordata.

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22. (a) Discuss the Epidermal derivatives.

Or

(b) Enumerate the general structure of Skin.

23. (a) Discuss the characteristics of respiratory tissues.

Or

(b) Discuss the evolution of heart.

24. (a) Describe the advanced nervous system in Arthropoda.

Or

(b) Discuss role of Malpighian tubules in excretion.

25. (a) Discuss the evolutionary significance of larval forms.

Or

(b) Discuss the comparative anatomy of brain.

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