

B.Sc. ZOOLOGY
FOURTH SEMESTER
COMPARATIVE ANATOMY OF VERTEBRATES
BSZ – 401

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

1. The blood vessels which carry blood away from the heart are
a. Veins
b. Arteries
c. Lymph
d. Capillaries
2. How many pairs of lateral arches arises from ventral aorta?
a. 3
b. 4
c. 5
d. 6
3. Statement I: In fishes a single meninx, the meninx primitiva is present between brain and spinal cord.
Statement II: Between skull and meninx primitiva is a perimeningeal space.
a. Statement I is true but statement II is false
b. Statement I is true but statement II is false
c. Both statements are true
d. Both statements are false
4. Which is the centre for regulation of digestion, respiration and circulation in human brain?
a. Medulla oblongata
b. Cerebrum
c. Hypothalamus
d. Cerebellum
5. Cranial nerves originate from brain and emerge through
a. Spinal cord
b. Skull
c. Medulla
d. None of the above
6. Organs of chemical sense consist of
a. Olfactory organs and auditory organs
b. Auditory organs and gustatory organs
c. Olfactory organs and gustatory organs
d. Visual organs and auditory organs
7. Which of these terrestrial mammals uses echolocation?
a. Bats
b. Dogs
c. Sheep
d. Cats
8. The urogenital system comprises of
a. Urinary and genital system
b. Circulatory and genital system
c. Urinary and circulatory system
d. Urinary and respiratory system

9. Statement I: In vertebrates, there is a pair of compact kidneys lying ventral to the coelom.
Statement II: A kidney is made of a large number of uriniferous tubules.
- Statement I is true but statement II is false
 - Statement I is true but statement II is false
 - Both statement I and II are true.
 - Both statement I and II are false
10. Arrange the following types of kidneys in terms of evolution.
- Metanephros, mesonephros, pronephros
 - Mesonephros, pronephros, metanephros
 - Pronephros, mesonephros, metanephros
 - Pronephros, metanephros, mesonephros
11. The three sense capsules arise from the _____.
- Dermocranium
 - Neurocranium
 - Splanchnocranium
 - None of the above
12. Statement A: Ungulates have selenodont type of teeth.
Statement B: Teeth of horses can avoid damage for presence of silica.
- Only A is true
 - Both A and B is true
 - Only B is true
 - Both A and B is false
13. Which among these is a part of pelvic girdle in hominids?
- Ischium
 - Epipubic
 - Ilium
 - Pubis
14. Statement A: Fishes are adapted for aquatic breathing.
Statement B: Embryonic development of skeletal system helps in respiration.
- Only A is true
 - Both A and B is true
 - Only B is true
 - Both A and B is false
15. Statement A: Tarsals are a part of hind limbs in tetrapods.
Statement B: Humerus also is of the same part.
- Only A is true
 - Both A and B is true
 - Only B is true
 - Both A and B is false
16. All hard horny structures develop due to keratin, a type of _____.
- Fat
 - Protein
 - Transfat
 - Scleroprotein
17. The larynx in an amphibian is innervated by the _____ nerve.
- X
 - XI
 - XII
 - XV
18. Larval gills are outgrowths formed from
- Pharyngeal pouches
 - Oral cavities
 - Gill arches
 - Intestinal origins
19. In an embryo, the mesenchyme forms a group of _____ below the pharynx.
- Epicardium
 - Endocardial
 - Endocardium
 - Endothelial

20. In the circulatory system of vertebrates there are two systems of elaborately branching tubes which carry fluids to the tissues. They are a blood vascular system and a _____.
- a. Digestive
 - b. Respiratory
 - c. Lymphatic
 - d. Nervous

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PART-B : Descriptive

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain the evolution of heart from single chamber to four chamber with appropriate diagram. 6+4=10
2. How does development of brain take place? Discuss the pattern formation of a generalized vertebrate brain along with diagram. 3+7=10
3. What are the different types of senses? Discuss the different types of receptors with example. 2+8=10
4. What are gonads? Explain the formation of male and female gonads. 2+8=10
5. Mention about the various epidermal origin glands in vertebrates with suitable examples. 10
6. Explain the various differences between axial and appendicular skeleton with description of anatomical parts. 10
7. Make a comparative table of the Integumentary system of vertebrates with suitable examples. 10
8. Comment on the various factors or processes that make the digestive system a necessary yet complex structure. 10

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