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1 (Sem-4) ZLG 5

2025

ZOOLOGY

Paper : ZLG0400504

(Comparative Anatomy of Vertebrates)

Full Marks : 45

Time : 2 hours

***The figures in the margin indicate
full marks for the questions.***

1. Choose the correct answer : 1×5=5

(a) What is the primary function of stratum corneum in the epidermis ?

(i) Sensation

(ii) Melanin production

(iii) Thermoregulation

(iv) Protection against pathogens and dehydration

- (b) Jaw suspension in frog is :
- Autostylic
 - Craniostylic
 - Hyostylic
 - Streptostylic
- (c) Which of the following structures is directly connected to the aortic arch in humans ?
- Pulmonary artery
 - Subclavian artery
 - Brachiocephalic trunk
 - Hepatic portal vein
- (d) Which type of kidney is found in adult birds and mammals ?
- Pronephros
 - Mesonephros
 - Metanephros
 - Opisthonephros
- (e) Teeth of humans are :
- Diphyodont
 - Heterodont
 - Homodont
 - Both (i) and (ii)

2. Write short notes on the following :
(any five) 2×5=10
- Pelvic girdle and its bones
 - Functions of integument
 - Mesonephric kidney
 - Aortic arch of amphibians
 - Jaw suspensorium of fishes
 - Auditory receptors
 - Air sacs
 - Vagus nerve
 - Heart of reptiles
 - Diphyodont teeth
3. Answer briefly : (any four) 5×4=20
- Briefly highlight the structure and function of the types of dentition in vertebrates.
 - Explain the different components of the appendicular skeleton of vertebrates.
 - What do you understand by accessory respiratory organs ? Briefly discuss on any two types of accessory respiratory organs with examples of your choice.

- (d) Explain the viewpoints on the evolution of the urinogenital duct in vertebrates.
- (e) Briefly explain the structure and function of visual receptors in man.
- (f) Citing examples, describe the different types of vertebrae that are known in vertebrates.
- (g) Write briefly on the accessory organs of digestion in vertebrates.
- (h) Compare and contrast the brain of fish and birds.

4. Answer elaborately : **(any one)** $10 \times 1 = 10$

- (a) Give a comparative account on the visceral arches of vertebrates.
- (b) Explain the structure and function of derivatives of integuments in vertebrates.
- (c) Give an account on the cranial nerves in mammals.
- (d) Explain the components of the axial skeleton highlighting the structural and functional differences in different groups of vertebrates.