

- (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.

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4

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Total number of printed pages-4

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 :  $1 \times 5 = 5$

- (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

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(b) Jaw suspension in frog is :

- (i) Autostylic
- (ii) Craniostylic
- (iii) Hyostylic
- (iv) Streptostylic

(c) Which of the following structures is directly connected to the aortic arch in humans ?

- (i) Pulmonary artery
- (ii) Subclavian artery
- (iii) Brachiocephalic trunk
- (iv) Hepatic portal vein

(d) Which type of kidney is found in adult birds and mammals ?

- (i) Pronephros
- (ii) Mesonephros
- (iii) Metanephros
- (iv) Opisthonephros

(e) Teeth of humans are :

- (i) Diphyodont
- (ii) Heterodont
- (iii) Homodont
- (iv) Both (i) and (ii)

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2

2. Write short notes on the following : **(any five)**  $2 \times 5 = 10$

- (a) Pelvic girdle and its bones
- (b) Functions of integument
- (c) Mesonephric kidney
- (d) Aortic arch of amphibians
- (e) Jaw suspensorium of fishes
- (f) Auditory receptors
- (g) Air sacs
- (h) Vagus nerve
- (i) Heart of reptiles
- (j) Diphyodont teeth

3. Answer briefly : **(any four)**  $5 \times 4 = 20$

- (a) Briefly highlight the structure and function of the types of dentition in vertebrates.
- (b) Explain the different components of the appendicular skeleton of vertebrates.
- (c) What do you understand by accessory respiratory organs? Briefly discuss on any two types of accessory respiratory organs with examples of your choice.

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3

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