

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 : 1×5=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 :
- (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)

2. Write short notes on the following :
(*any five*) 2×5=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*) 5×4=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.

- (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)** . 10×1=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.