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3 (Sem-4/CBCS) ZOO HC 1

2024

**ZOOLOGY**

(Honours Core)

Paper : ZOO-HC-4016

**(Comparative Anatomy of Vertebrates)**

Full Marks : 60

Time : Three hours

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

1. Choose the correct answer :  $1 \times 7 = 7$
- (a) Hairs and nails are composed mainly of
- (i) collagen
  - (ii) keratin
  - (iii) adipose tissue
  - (iv) cartilage
- (b) Foramen of Panizza is seen in
- (i) crocodile
  - (ii) frog

Contd.

- (iii) fish
- (iv) cow
- (c) Wolffian body is also known as
  - (i) pronephros
  - (ii) mesonephros
  - (iii) archinephros
  - (iv) metanephros
- (d) The fifth cranial nerve is
  - (i) oculomotor nerve
  - (ii) trochlear nerve
  - (iii) abducens nerve
  - (iv) trigeminal nerve
- (e) Organ of Corti is present within
  - (i) scala media
  - (ii) scala vestibuli
  - (iii) scala tympani
  - (iv) None of the above
- (f) Pain receptors are also called as
  - (i) mechanoreceptor
  - (ii) Merkel's disc
  - (iii) vomeronasal organ
  - (iv) nociceptors

- (g) Teeth with well-developed roots set in bony sockets in the jaw are called
  - (i) acrodont
  - (ii) thecodont
  - (iii) pleurodont
  - (iv) bunodont

2. Write short notes on the following :  $2 \times 4 = 8$

- (a) Uropygial gland of birds
- (b) Adrenergic and cholinergic receptors
- (c) Stomach of ruminants
- (d) Role of integument in thermoregulation

3. Answer the following questions : **(any three)**  
 $5 \times 3 = 15$

- (a) Briefly explain the major components of axial skeleton in mammals.
- (b) Write a note on the accessory organs of the digestive system.
- (c) What do you mean by external and internal respiration? Elaborate the structural features of internal or true gills found in adult fishes.  $1 + 4 = 5$
- (d) Write a note on the structural and functional aspects of rods and cones found in the retina of human eye.  $3 + 2 = 5$

(e) Briefly explain the functions of sympathetic and parasympathetic nervous systems.  $3+2=5$

4. (a) What are visceral arches? Give a comparative account of the visceral arches in vertebrates.  $2+8=10$

**Or**

(b) What is the hilum of kidney in mammals? Discuss the comparative structure of kidney in vertebrates with neat labelled diagrams.  $2+8=10$

5. (a) Give a comparative account on the integument of reptiles, birds and mammals with suitable diagrams. 10

**Or**

(b) Write a note on the evolutionary changes in the pattern of heart in vertebrates with appropriate diagrams.

6. (a) What is corpus callosum? Describe the structural features of the brain of a reptile and compare it with that of a mammal.  $2+8=10$

**Or**

(b) What are air sacs? Write a note on the types of air sacs. Mention its functions.  $2+4+4=10$