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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. $2+4+4=10$