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ZOOLOGY

( Major )

Paper : 3·1

( Comparative Anatomy and Histology )

Full Marks : 60

Time : 3 hours

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

1. Fill in the blanks (any three) : 1×3=3
- (a) Tendons are rich in \_\_\_\_ fibres.
  - (b) The accessory respiratory organ of *Heteropneustes fossilis* is called \_\_\_\_.
  - (c) The urinary bladder in man is lined by \_\_\_\_ epithelium.
  - (d) The most common fixative used in electron microscopy is \_\_\_\_.
2. State True or False : 1×2=2
- (a) In caecilian, the left lung is rudimentary.
  - (b) Nissl granules are found in APUD cells.

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3. Answer the following questions :  $1 \times 2 = 2$

- (a) How many chambered heart is found in gharial?
- (b) Name a dye which is amphoteric but behaves as an acid dye when applied to tissue.

4. Answer any *four* from the following questions :  $2 \times 4 = 8$

- (a) What is mordant? Give an example of mordant.
- (b) Describe the structure of thyroid gland in reptile.
- (c) In what respect the brain of Osteichthyes is more specialised than that of Chondrichthyes?
- (d) State the functions of adipose tissue.
- (e) Define synapse. What are the different types of synapse?
- (f) Briefly state how tissues are maintained.

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

- (a) What are the different types of horn found in mammals? Describe each of them with example.  $2 + 3 = 5$

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(b) Distinguish between mesonephros kidney and metanephros kidney. 5

(c) Describe the structure of hyaline cartilage with a neat labelled diagram.  $4 + 1 = 5$

(d) Write the principles of fixation. 5

(e) Give a comparative account of internal ear (membranous labyrinth) in vertebrate series. 5

6. Answer any *three* from the following questions :  $10 \times 3 = 30$

(a) Give a comparative account of the structure of skin in vertebrates. 10

(b) Write a comparative account of brain of reptile and mammal. 10

(c) What is aortic arch? Discuss the modification of aortic arches from the ancestral type in different vertebrate groups.  $2 + 8 = 10$

(d) Why is blood called connective tissue? Describe the structure of blood. How does blood differ from lymph?  $2 + 6 + 2 = 10$

(e) What is periodic acid-schiff (PAS) reaction? Write the procedure of staining glycogen by PAS reaction.  $3 + 7 = 10$

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