

2012

ZOOLOGY

(Major)

Paper : 3.1

Full Marks : 60

Time : 2½ hours

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

1. Answer as directed :

1×7=7

(a) Schneiderian membrane is a simple —
epithelium.

(Fill in the blank)

(b) Wall of urinary bladder is made up of
— epithelium.

(Fill in the blank)

(c) Thyroid gland develops as evagination
from the floor of the — and — in
origin.

(Fill in the blanks)

(d) What kind of muscles constitute the
heart?

- (e) Name the only integumentary gland found in birds.
- (f) In amphibians, the sinus venosus connects only to the right atrium.
(Write True or False)
- (g) Keratin is formed in the epidermis of all living vertebrates.
(Write True or False)

2. Answer the following :

2×4=8

- (a) Name different modes of respiration in amphibia. $\frac{1}{2} \times 4 = 2$
- (b) Write the names of any two basic dyes, two basophilic tissue components; two acid dyes and two acidophilic tissue components. $\frac{1}{2} \times 4 = 2$
- (c) Name the animals having—
(i) two-chambered heart;
(ii) three-chambered heart;
(iii) four-chambered heart;
(iv) incompletely divided ventricle. $\frac{1}{2} \times 4 = 2$
- (d) Define mordant and metachromatic dye with example. $1 + 1 = 2$

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

(a) Define fixation and write about its mode of action. Explain briefly the fixation procedure. $1+2+2=5$

(b) Write in brief about accessory respiratory organs in fishes. 5

(c) Give a comparative account of the organ of hearing in scoliodon and amphibia. 5

(d) Write the principle and procedure of histological staining of nucleic acids. 5

(e) Compare mammalian thyroid with thyroid of bird. 5

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

(a) Give a brief account of embryonic development of kidney and organisation of kidney in vertebrate. $6+4=10$

(b) Describe mammalian skin with suitable diagram. Write at least six important functions of skin. $4+3+3=10$

(4)

- (c) Describe epithelial tissue. Discuss various types of epithelial tissue and mention at least one function of each. $2+8=10$
- (d) Draw a labelled diagram of the brain of mammal and describe its advancement over the reptilian brain. $6+4=10$
- (e) Define aortic arches. Trace the evolution of aortic arches in vertebrates. $2+8=10$
