

Total number of printed pages—4

3 (Sem-3) ZOO M1

2021

(Held in 2022)

ZOOLOGY

(Major)

Paper : 3:1

(Comparative Anatomy and Histology)

Full Marks : 60

Time : Three hours

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

1. (a) Fill in the blanks : **(any four)**

1×4=4

(i) Dermis of vertebrate integument
is derived from _____.

(ii) In fishes, heart is small and _____
chambered with a single circuit of
blood circulation.

Contd.

(iii) _____ type of kidney occurs in the adult reptiles, birds and mammals.

(iv) _____ are the special cells found in the brain and spinal cord.

(v) Fishes carry a gas filled _____ on the dorsal side of the gut which serves as hydrostatic organ.

(b) Write True **or** False : **(any three)**

1×3=3

(vi) Muscular tissue acts as first line of protection for body from any physical or chemical damage.

(vii) For light microscopy, both acidic and basic stains are used for the staining of cells or tissues.

(viii) Axon carries impulses away from the cell body.

(ix) Progressive staining is a slower staining process in which the tissue is left in the staining solution just long enough to reach the desired endpoint.

2. Answer the following questions : **(any four)**

2×4=8

(a) Difference between bone and cartilage.

(b) Functions of blood.

(c) What is mordant ?

(d) Write a note on Sweat glands.

(e) What is vital staining ?

(f) Functions of Adipose tissue.

3. Answer the following questions : **(any three)**

5×3=15

(a) Describe the organ of hearing and balancing in Amphibia.

(b) Draw a labelled diagram of mammalian heart.

(c) Give a comparative account of Thyroid gland in birds and mammals.

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

(e) Write briefly about the structure and functions of a neuron.

4. Answer the following questions : **(any three)**

10×3=30

- (a) Explain about the different types of epithelial tissues with diagram and function of each type. 10
- (b) Give a comparative account of the integument in vertebrates. 10
- (c) Discuss the basic principles of fixation and staining. Write its importance in biological science. 4+4+2=10
- (d) Write an account of the succession of kidney in different vertebrate groups. 10
- (e) Explain the evolutionary trends in the structure of aortic arches of vertebrates. 10
- (f) What are dyes ? Write the difference between acid and basic dyes. Write the chemical composition of dyes and their properties. 1+1+4+4=10
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