



ED-629

M.Sc. 3rd Semester
Examination, March-April 2021

ZOOLOGY

Paper - I

Comparative Anatomy of Vertebrates

Time : Three Hours] [Maximum Marks : 80
[Minimum Pass Marks : 16

Note : Answer **all** questions. All questions carry equal marks.

Unit-I

1. Write short notes on any **two** of the following :
- (a) Extinct Reptiles
 - (b) Types of Dermal scales in fishes
 - (c) Bones of Hind limb in mammal
 - (d) Autonomic nervous system
 - (e) Venous Heart

DRG_18_(3)

(Turn Over)

(2)

Unit-II

2. Write a note on Origin of Reptiles.

OR

Write notes on the following :

- (a) What is Neoteny ? Describe it by suitable examples.
(b) Write the classification of class Aves along with characters and examples.

Unit-III

3. Give a comparative account on pelvic girdle of Amphibia, Reptilia, Aves and Mammal.

OR

Write notes on the following :

- (a) Different types of cutaneous glands and their functions
(b) Claws and nails in vertebrates

Unit-IV

4. Explain double circuit Heart.

OR

Give a comparative account on anatomy of lung in Aves and Mammal.

(3)

Unit-V

5. Write notes on genital ducts (male and female) in Reptilia and Aves.

OR

Give a comparative account on Anatomy of Reptilian, Aves and Mammalian brain.

(2)

What are behavioural characteristics in animals ? Describe in short.

Unit-II

3. How do animals establish auditory communication among them ?

OR

Write short notes on the following :

- (a) Memory
(b) Courtship in animals

Unit-III

4. Why and how do fish migrate ? Describe with proper examples and suitable illustrations.

OR

Write a note on neuroethology.

Unit-IV

5. How do schooling help fishes ? Write its features and significance.

OR

Describe the social organization in primates.



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Paper - III

Environment Physiology and
Population Ecology

Time : Three Hours] [*Maximum Marks* : 80

Note : Answer **all** questions in which Question Number 1 is compulsory. All questions carry equal marks.

1. Write notes on the following :

- (a) Ecotype
- (b) Mechanism of Adaptations
- (c) Concept of plastic strain
- (d) Oxygen deficient stress

Unit-I

2. Write characteristics of population density.

OR

DRG_133_(2)

(Turn Over)

(2)

Write notes on the following :

- (a) Demography
- (b) Reproductive values

Unit-II

3. Explain features of marine adaptations.

OR

Discuss what are the characteristics of fresh water life.

Unit-III

4. Write an account on stress avoidance, stress tolerance and stress resistance with examples.

OR

Write notes on the following :

- (a) Acclimatization
- (b) Endothermic mechanism

Unit-IV

5. Explain the physiological responses during body exercise.

OR

Write an account on the role of meditation and yoga for stress management.



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Paper - IV

Immunology and Parasitism

Time : Three Hours] [*Maximum Marks* : 80

Note : Answer **all** questions in which Question Number 1 is compulsory. All questions carry equal marks.

1. (a) Interferon
(b) C-Kit
(c) Isotype
(d) Immunoglobulin super family
(e) Full form of BCG and HIV
(f) Precipitin curve
(g) Full form of ELISA and ART
(h) Tumour antigens

DRG_196_(3)

(Turn Over)

(2)

Unit-I

2. Describe the process of 'B-cell activation' in detail.

OR

Write short notes on the following :

- (a) Genetic factors of immunological barriers
- (b) Primary Lymphoid Organs
- (c) Type of 'T Cells'
- (d) Bursa of Fabricius

Unit-II

3. Write an essay on 'Molecular structure of immunoglobulins'.

OR

Write notes on the following :

- (a) Single domain antibodies
- (b) Immunoglobulin A and its types
- (c) Production of monoclonal antibody
- (d) Functions of immunoglobulins

Unit-III

4. Describe 'immunogenicity' in detail.

OR

(3)

Write notes on any **two** of the following :

- (a) Immunoprophylaxis
- (b) Immunofluorescence
- (c) DNA vaccine

Unit-IV

5. Write notes on the following :

- (a) Immune response against viral infections
- (b) Immunotherapy of cancer

OR

Write notes on the following :

- (a) Cell mediated immune response against cancer
 - (b) Immune response to HIV
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