



**FD-629**

M.Sc. 3rd Semester  
Examination, Dec.-Jan., 2021-22

**ZOOLOGY**

Paper - I

Comparative Anatomy of Vertebrates

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

[*Minimum Pass Marks* : 16

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

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**Unit-I**

1. Write short notes on any **four** of the following :
- (a) Old world monkeys
  - (b) Structure and function of Hoof
  - (c) Draw well labelled diagram of evolution of heart
  - (d) Organ of equilibrium in fishes
  - (e) Respiration in amphibians

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DRG\_46\_(3)

*(Turn Over)*

( 2 )

**Unit-II**

2. Explain Neoteny.

**OR**

Describe the palate of birds.

**Unit-III**

3. Write notes on the following :
- (a) Types and structure of scales
  - (b) Types and structure of horns

**OR**

Describe the following :

- (a) Atlas of vertebrates
- (b) Pelvic girdle in vertebrates

**Unit-IV**

4. Describe the circulation in vertebrates.

**OR**

Explain the evolution of aortic arches in vertebrates.

( 3 )

**Unit-V**

5. Give a comparative account of Olfactory sense organs in Amphibians, Reptilians and Mammals

***OR***

Describe the evolution of urinogenital system in higher vertebrates.

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## FD-630

M.Sc. 3rd Semester  
Examination, Dec.-Jan., 2021-22

### ZOOLOGY

Paper - II

Animal Behaviour

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

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**Note** : Answer **all** questions in which Question Number 1 is compulsory. Please write short and legible answers. No marks on irrelevant matters. All questions carry equal marks.

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1. (a) What is imprinting ?  
(b) What is chronobiology ?  
(c) What is memory ?  
(d) Write the name of two migratory birds.
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DRG\_94\_(2)

(*Turn Over*)

( 2 )

**Unit-I**

2. Explain innate behaviour with suitable example.

**OR**

Correlate sleep with biological rhythm.

**Unit-II**

3. How animals communicate through auditory signals ?

**OR**

What is conditioning ?

**Unit-III**

4. Explain any two types of bird migration.

**OR**

How do hormones affect behaviour ?

**Unit-IV**

5. What is schooling in fishes ? Describe with suitable example.

**OR**

Explain host-parasite relation with suitable examples.



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### **ZOOLOGY**

Paper - III

Environment Physiology and  
Population Ecology

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

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**Note** : Answer **all** questions in which Question No. 1 is compulsory. All questions carry equal marks.

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1. Write notes on the following :

- (a) Population density
- (b) Estuaries adaptation
- (c) Acclimatization
- (d) Effects yoga

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DRG\_141\_(3)

*(Turn Over)*

( 2 )

**Unit-I**

2. Describe process and patterns of ecological succession.

**OR**

Explain growth form and stochastic and time lag models of population growth.

**Unit-II**

3. Describe the levels of adaptation.

**OR**

Explain terrestrial adaptation in animals.

**Unit-III**

4. Describe the mechanism of regulation of body temperature.

**OR**

Explain basic concepts of environmental stress.

**Unit-IV**

5. Write a detailed account on osmoregulation of terrestrial habitats.

**OR**

**( 3 )**

Describe the various physiological responses  
to oxygen deficient stress.

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## **FD-632**

M.Sc. 3rd Semester  
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### **ZOOLOGY**

Paper - IV

Immunology and Parasitism

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

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

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1. (a) N K cells  
(b) Spleen  
(c) IgG  
(d) IgD  
(e) Cross reaction  
(f) Vaccine  
(g) AIDS  
(h) Viral infections

( 2 )

**Unit-I**

2. Give a detailed account of 'Secondary Lymphoid Organs'.

**OR**

Write short notes on the following :

- (a) B-Lymphocytes
- (b) Mast cells
- (c) Thymus
- (d) Lymph nodes

**Unit-II**

3. Describe the 'Basic molecular structure' of immunoglobulins in detail.

**OR**

Write notes on the following :

- (a) Functions of immunoglobulins
- (b) Monoclonal antibodies

**Unit-III**

4. Give a detailed account of 'Antigen-antibody interaction'.

**OR**

( 3 )

Write short notes on the following :

- (a) Active immunization
- (b) Passive immunization
- (c) DNA vaccines
- (d) Precipitation reaction

**Unit-IV**

5. Describe the process of 'immune response for bacterial infections'.

**OR**

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

- (a) Primary immunodeficiency
  - (b) Immune response in helminths infection
  - (c) Immune response in cancer
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