



ED-318

M.Sc. 1st Semester
Examination, March-April 2021

ZOOLOGY

Paper - I

Biosystematics, Taxonomy and Biodiversity

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

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

1. Write notes on the following :
- (a) Molecular taxonomy
 - (b) Speciation
 - (c) Zoological types
 - (d) Hotspots of Biodiversity

Unit-I

2. Define Cytotaxonomy. Explain various techniques used in it with suitable examples.

OR

DRG_45_(2)

(Turn Over)

(2)

Describe importance and applications of Biosystematics in Biology.

Unit-II

3. What are the various taxonomic characters used to classify an organism? Explain with suitable examples.

OR

Define Species. Write about different 'species concept' to describe it.

Unit-III

4. Define Taxonomic keys. Explain the following with example :
- (a) Indented key
 - (b) Circular key
 - (c) Pictorial key

OR

Write an essay on preservation of animals.

Unit-IV

5. Define Biodiversity. Explain various methods of conservation of biodiversity.

OR

Write notes on the following :

- (a) Types of biodiversity
- (b) Any two threats to biodiversity



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Paper - II

Structure and Function of Invertebrates

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

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

1. Write short notes on the following :

- (a) Cilia
- (b) Trachea
- (c) Nauplius larva

Unit-I

2. Write a note on origin of coelom.

OR

DRG_100_(2)

(Turn Over)

(2)

Explain, what are acoelomates and pseudocoelomates.

Unit-II

3. Explain filter feeding with suitable example.

OR

Explain with suitable diagrams the structure and arrangements of Trachea.

Unit-III

4. Write a note on organs of excretion in invertebrates.

OR

Explain the nervous system of Starfish.

Unit-IV

5. Write short notes on the following :
(a) Parasitic larva
(b) Larva of parasite invertebrates

OR

Explain the organisation of Rotifera.



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Paper - III

Population Genetics and Evolution

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

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

1. Explain the following :
 - (a) Lamarckism
 - (b) Meiotic drive
 - (c) Reproductive isolation
 - (d) Micro evolution

Unit-I

2. Describe Darwinism.

OR

DRG_162_(2)

(Turn Over)

(2)

Describe anatomical, biochemical and physiological evidence of evolution.

Unit-II

3. Describe Mutation :

OR

Explain the following :

- (a) Hardy-Weinberg law
- (b) Genetic drift

Unit-III

4. Describe gene evolution.

OR

Describe factors affecting human disease.

Unit-IV

5. Describe evolution of Man.

OR

Describe evolution of Elephant.



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Paper - IV

Tools and Techniques in Biology

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

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

1. (a) Describe principle of partition chromatography.
 - (b) Differentiate between transmission electron microscopy and scanning electron microscopy.
 - (c) Explain chemical basis of fixation by formaldehyde.
 - (d) Describe various precautions to be taken to maintain aseptic conditions during media preparation.
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DRG_226_(2)

(Turn Over)

(2)

Unit-I

2. Describe principle, working and application of Spectrophotometer.

OR

Give an account of PAGE using SDS gel system.

Unit-II

3. Describe principle, construction and application of interference microscope.

OR

What is Fluorescence ? Give the principle and instrumentation to utilize this property of matter for microscopy.

Unit-III

4. Write an essay on biological assays in vivo.

OR

What are different fixatives used to fix biological tissues ? Give merits and demerits of each fixative.

Unit-IV

5. What is DNA hybridization ? How is it achieved ? Why is it important ?

OR

Write an essay on freeze techniques.