

ZOOLOGY (HONS.) Paper-I

In all 08 questions to be set, four from each group. Five questions are to be answered you will have to select at least two from each group. (**Group-A** and **Group-B**)

Group-A (Animal Diversity-I)

1. Classification Salient features and classification of major invertebrate phyla up to orders.

2. Protozoa:

(a) Structure & Life-cycle of Paramecium Structure. Life cycle & pathogenicity of Trypanosoma gambiense and Entamoeba histolytica.

(b) Nutrition

(c) Reproduction

3. Evolution of Metazoa

4. Canal system in sponges

5. Cnidaria Morphology and Life history of Obelia. Polymorphism, Corals and Coral reefs.

6. Ctenophora Structure and affinities

7. Platyhelminthes Structure. Life cycle and pathogenicity of Taenia solium. Parasitism and Parasitic adaptations.

8. Nematelminthes Structure, Life cycle, and pathogenicity of Ascaris lumbricoides and Wuchereria bancrofti.

9. Annelida: Haemocoelomic system in leech and excretory system in annelids.

- 10.** Mollusca Torsion and detorsion in Gastropoda, Pearl formation.
- 11.** Echinodermata Water Vascular system in starfish. Larval forms.

Group-B

(Environmental Biology and Animal Behavior)

- 1.** Laws of limiting factors
- 2.** Ecosystem Types and components of a freshwater ecosystem, Food chain, Food web, Ecological pyramids, and Energy flow through an ecosystem.
- 3.** Biodiversity and Conservation of Wild Life
- 4.** Toxicology Definition, types of toxicants and their nature
- 5.** Ethology Concept, origin and historical background
- 6.** Learning Types of learning. Mechanism of learning
- 7.** Social behavior in insects
- 8.** Rainwater harvesting
- 9.** Pheromones
- 10.** Altruism and selfishness.

Paper-II

In all 08 questions to be set, Four from each group. Five questions are to be answered. You will have to select at least two from each group.

Group-A (Animal Diversity II)

1. Origin of chordates, & Hemichordata
2. General characters and classification of urochordate and Cephalochordata. Retrogressive metamorphosis in herdmania.
3. Herdmania. Classification of Cyclostomes. Agnatha General Characters and Petromyzon.
4. Pisces General characters of Chondrichthyes and Osteichthyes and classification up to order, Migration, and respiration.
5. Amphibia General characters and classification up to order. Origin, Parental care, Neoteny.
6. Reptilia General characters and classification up to order. The biting mechanism in a snake. Skeletal peculiarities of Chelonia.
7. Aves, General characters and classification up to order, Flight adaptations, Origin, and Migration of birds.
8. Mammals: General characters and activities of Prototheria and Metatheria. Adaptive radiation and Dentition.

Group-B (Developmental Biology)

1. Gametogenesis, Spermatogenesis, and Oogenesis
2. Types of eggs

3. Fertilization
4. Types and Patterns of cleavage
5. Fate maps in Frog & Chick
6. Gastrulation in Frog and Chick up to the formation of three germinal layers.
7. Extra- embryonic membranes in birds
8. Structure, Types, and Functions of Placenta
9. Elementary knowledge of primary organizer
10. Parthenogenesis

Zoology Honours practical syllabus

Time- 4 hours
Full marks- 50

1. Diagrammatic representation of General Anatomy, Digestive and Nervous System of Cockroach Earthworm and Prawn [Demon- 10 Marks station through charts & models and graphics only] 10 Marks
2. Temporary mount 05 marks
3. Spotting-Museum specimen-2
Slides (Histology-2. Embryology-1) 10 marks
4. Study of habituation in earthworm/ Study of zooplanktons in pond water 05 Marks
5. Determination of pH and dissolved oxygen content. 05 Marks
6. Class Records Field Work Excursion. 05 Marks
7. Viva- Voce. 10 Marks

LNMU B.Sc. part-1 zoology subsidiary syllabus

In all 08 questions are to be set, four from each group. Five questions are to be answered you will have to select at least two from each group.

Group-A (Animal Diversity-I)

1. Salient features and classification of major invertebrate phyla up to orders.
2. Protozoa-Locomotion, osmoregulation, nutrition, and reproduction.
3. Porifera-Canal system, reproduction, affinities, and Spicules
4. Coelenterata-Obelia and Aurelia, Corals & coral reefs
5. Ctenophora-Structure & Affinities
6. Platyhelminthes-Structure, life cycle, and pathogenicity of Fasciola hepatica & Taenia solium
7. Annelida- Haemocoelomic system in Leach: Excretory system
8. Mollusca-Torsion & detorsion in Gastropoda
9. Onychophora-Structure & affinities
10. Arthropoda-Respiration in Prawn, Mouth Parts in insects & General account of Trilobita
11. Echinodermata- Water vascular system in Starfish, Larval forms

Group-B (Animal Diversity-II)

1. Origin of chordates
2. Retrogressive metamorphosis in Herdmania
3. Feeding mechanism and development of Amphioxus

4. Fish- Circulatory system in Scoliodon and Labeo. Respiration
5. Amphibia-Origin, Classification and parental care
6. Reptiles-Chelonia and poisonous snakes
7. Birds-Origin, flight, and adaptation & migration
8. Mammals General characters, origin, Dentition
9. Heart and aortic arches in the vertebrates

Zoology (subsidiary) Practical syllabus -

Time- 4 hours

Full marks- 25

1. Dissection -05 marks
2. Specimens -05 marks
3. Slides -05 marks
4. Bones -05 marks
5. Viva Voce -05 marks