

Magadh University



COURSES OF STUDIES

For

Bsc Zoology (Hon. / Sub. / Gen.)

IN ZOOLOGY

B. Sc. Part - I:- ZOOLOGY (HONOURS)

Time: 3 Hours]

(Non-Chordate)

[Full Marks: 75

In all ten questions are to be set out of which number 1 and 2 shall consist of objective (1 x 15 marks) and short answers (3 x 5) requiring questions respectively and both shall span over the whole syllabus in the paper. Students would be required to answer five questions, of which question numbered 1 and 2 shall be compulsory.

- I. Bionomics general characters and classification (up to orders) of the following Phyla: Protozoa, Porifera, Cnidaria, Ctenophora, Platyhelminthes Aschelminthes Annelida, Arthropoda, Mollusca, Echinodermata and Hemichordate.
Detailed study of the following types:
1. **Protozoa:** Paramecium Parasitic protozoans and their modes of infection Polystomella (Elphidium).
2. **Porifera:** Sycon, Canal system in sponges, affinities of the phylum.
3. **Cnidaria:** Obelia, Aurelia Sea anemone
4. **Ctenophora:** General organization of Hormiphora affinities of the phylum.
5. **Platyhelminthes:** Fasciola hepatica. Teania sodium and Planaria.
6. **Aschelminthes:** Ascaris lumbricoides, Wuchereria bancrofti.
7. **Annelida:** Pheretima posthuma, Leech, Nereis.
8. **Arthropoda:** Paloemon, Peripatus, Adaptive variations in insect mouth parts. Sacculina.
9. **Ectoprocta:** Bugula.
10. **Mollusca:** Unio, Pila, Sepia, Torsion and detorsion in Gastropoda.
11. **Echinodermata:** Larval forms in Echinoderms, water Vascular System in Echinoderm

Time: 3 Hours]

PAPER-IIA

[Full Marks: 75

(Ecology, Animal Behaviors and Biometry)

- I. **Ecology:**
 1. Concept of Biosphere (Lithosphere, hydrosphere and atmosphere).
 2. Ecosystem: Definition, structure and function of typical ecosystem
 3. Structure (Abiotic and Biotic) and function (energy flow Biogeochemical cycles) of fresh water, grassland, desert and forest ecosystems.
 4. Community structure and its ecological succession.
 5. Pollution and its hazards (air, water and sound).
 6. Wild- life conservation: Types and measures, National Parks and Sanctuaries.
- II. **Animal Behaviour:**
 1. Scope of Ethology, Innate and learned behaviour.
 2. Social behavior in insects.
 3. Parental care in fishes and amphibia.
 4. Brooding, nesting and migratory behavior in birds.
 5. Concept of Biological clock .
- III. **Biometry:**
Scope and application of the following statistical method in Biology.
 1. Normal distribution and its attribution range, mode, median and arithmetic mean.
 2. Standard error, standard deviation, Simple test and Chi-square test.

PRACTICAL
ZOOLOGY PART-I (HONOURS)

Time: 4 Hours]

PAPER-IB and IIB

[Full Marks: 50

- 1. Dissection:** **10**
Pheretima, Leech-Alimentary canal, Reproductive, Excretory and Nervous systems.
Palaemon - Alimentary canal, Nervous system.
Unio Pila and Sepia- Nervous system, organs of Pallial complex of Pila.
- 2. Permanent stained preparation of the following:** **05**
Paramoecium gemmules, Spicules, obeliacolony, Nephridia and Ovary of
Pheretima Jaw of Leech, statocyst of prawn, osphradium, radulla and gill of pila of
unio, Glochidium larva, of crustace and Echinoderma, Pediceralia.
- 3. Spotting (Each of two marks):** **14**
(i) Museum specimens - 02
(ii) Slides - 04
(iii) Specimens relating animal behavior or parental care. - 01
- 4. Ecology:** **06**
(i) Analysis of soil/pond biota.
(ii) Determination of dissolved oxygen and pH of different water samples.
(iii) Community structure of Grassland.
(iv) Moisture content of soil sample.
- 5. Biometry:** **05**
Calculation of the arithmetic mean and standard deviation of the samples provided.
- 6. Record and field work.** **05**
- 7. Viva.** **05**