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SYLLABUS
B.Sc. ZOOLOGY

Part-I

(HONOURS)

THEORY

Paper-I(A)

(NON-CHORDATE)

Time : 3 Hours

Full Marks : 75

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

1. Bionomics– General characters and Classification (upto orders) of the following Phyla:

Protozoa, Porifera, Cnidaria, Platyhelminthes, Annelida, Arthropoda, Mollusca, Echinodermata and Hemichordata.

2. Detailed study of the following types:

- a) Protozoa– *Paramecium*, *Leishmania donovani*, *Entamoeba histolytica*, *Polystomella (Elphidium)*, *Trypanosoma*, *Vorticella*.
- b) Porifera– Canal system, Skeleton and Reproduction, affinities of the phylum.
- c) Cnidaria– *Obelia*, *Aurelia*, Coral reef formation.
- d) Ctenophora– General organization of *Hormiphora*, affinities of the phylum.
- e) Platyhelminthes– *Fasciola hepatica* and *Taenia solium*.
- f) Aschelminthes– *Ascaris lumbricoides*, *Wuchereria bancrofti*.

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- g) Annelida– *Pheretima posthuma*, *Hirudo*.
- h) Arthropoda– *Palaemon*, *Peripatus*, *Sacculina*, Larval forms of Crustacea
- i) Mollusca– *Unio*, *Pila*, *Sepia*, Torsion and detorsion in Gastropoda.
- j) Echinodermata– *Asterias*,
- k) Hemichordata– *Balanoglossus*.

Paper-II (A)

ECOLOGY, ANIMAL BEHAVIOUR
AND BIOMETRY

Time : 3 Hours

Full Marks : 75

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

I. ECOLOGY :

1. Concept of Biosphere (Lithosphere, Hydrosphere and Atmosphere).
2. Ecosystem— Definition, Structure and function of Pond Ecosystem.
3. Major Ecosystems of the world— Structure (abiotic and biotic), function including Energy flow in the following—
 - (a) Freshwater
 - (b) Grass land
 - (c) Desert
 - (d) Forest Ecosystem.
4. Biogeochemical cycles (Carbon, Nitrogen, Oxygen & Sulphur).
5. Community structure & its ecological succession.
6. Pollution and its hazards; Green house effect, Ozone depletion.
7. Wild-life conservation.

II. ANIMAL BEHAVIOUR :

1. Scope of Ethology, Innate and learned behaviour.
2. Social behaviour in insects.
3. Parental care in fishes and Amphibia.
4. Brooding, nesting and migratory behaviour in birds.
5. Concept of Biological clock.

III. BIOMETRY :

1. Normal distribution.
2. Mean, Mode and Median
3. Standard deviation
4. Standard error of Mean, Median and Standard deviation.
5. Student t-test, Testing the significance of (i) the mean of random sample from a normal population (ii) and the difference between sample means.
6. Chi Square test
 - (a) Goodness of fit
 - (b) Test of Independence.