

Course objectives: The primary objective of the course in semester-I and semester-II is to make acquaintance with different life forms on earth and drive home the relationship between different living forms both at the genetic and the ecological level. It will provide an opportunity to have a novel branch of science dealing with identification and assigning exact position in animal kingdom.

NON-CHORDATES:

Unit –I

1. **General characters and classification up to class**
2. **Protozoa:**
 - 2.1 Locomotion, Nutrition & Reproduction (General)
 - 2.2 Life cycle and pathogenicity of *Leishmania*
3. **Porifera:**
 - 3.1 Canal system (General)
 - 3.2 Life cycle of sycon

Unit –II

1. **Cnidaria:**
 - 1.1 Life cycle of *Obelia*
 - 1.2 Coral reefs
2. **Ctenophora:** Affinities
3. **Platyhelminthes:** Parasitic adaptation (General)

Unit –III

1. **Nemathelminthes:**
 - 1.1 Life cycle of *Ascaris lumbricoids*
 - 1.2 Life cycle of *Wuchereria bancrofti*
2. **Annelida:**
 - 2.1 Metamerism
 - 2.2 Type study: Leech and Earthworm (Digestive, Excretory, Circulator system – Comparative)
3. **Arthropoda:**
 - 3.1 Larval forms of crustacean
 - 3.2 Mouth parts in insects
 - 3.3 Vision (Structure of eye)in prawn and cockroach

Unit –IV

1. **Mollusca:**
 - 1.1 Torsion and detorsion in gastropod
 - 1.2 Respiration in Mollusca (*Unio* & *Pila*)
2. **Echinodermata:**

- 2.1 Water vascular system in Holothuria
- 2.2 Larval forms of Echinodermata
- 3. **Hemichordates:** General characters and affinities

Recommended books

Non-chordates

1. Barnes, R.D. Invertebrate Zoology-(W.B. Saunders Co.)
2. Invertebrate structure and function: Barrington (Nelson)
3. Kotpal, Agarwal & Khetrapal: Modern Textbook of zoology: Invertebrate (Rastogi publication)
4. R.L. Kotpal: Invertebrate series – Protozoa to Minor phyla: (Rastogi publication)
5. Practical zoology INVERTEBRATE- S.S. LAL
6. Nigam: Biology of non-chordates (1997, S Chand)