

B.SC. (SEMESTER I & II) PAPER –III (PRACTICAL)

Max. Marks: 100

Time allowed: 6 Hours
(2 Sessions M&E)

(A) Classification up to orders with ecological note and economic importance of the following animals:

1. Protozoa Lamination of cultures of *Amoeba*, *Euglena* and *Paramecium*; permanent prepared slides: *Amoeba*, *Euglena*, *Trypanosoma*, *Noctiluca*, *Eimeria*, *Paramecium* (binary fission and conjugation), *Opalina*, *Verticella*, *Balantidium*, *Nyctotherus*, radiolarian and foramaniferan ooze.
2. Parazoa (Porifera) Specimens: *Sycon*, *Grantia*, *Euplectela*, *Hyalonema*, *Spongilla*, *Euspongia*
3. Coelenterata Specimens: *Porpita*, *Varella*, *Physalia*, *Aurelia*, *Rhyzostoma*, *Metridium*, *Millipora*, *Alcyonium*, *Tubipora*, *Zoanthus*, *Madrepora*, *Favia*, *Fungia*, and *Astrea*. Permanent prepared slides: *Hydra* (W.M.), *Hydra* with buds, *Obelia* (colony and medusa), *Sertularia*, *Plumularia*, *Tubularia*, *Bougainvillea*, *Aurelia* (sense organs and stages of life history).
4. Platyhelminthes Specimens: *Dugesia*, *Fasciola*, *Taenia*, *Echinococcus*. Permanent prepared slides: *Miracidium*, *sporocyst*, *redia*, *cercaria*, *scolex* and *proglottids of Taenia* (mature and gravid).
5. Aschelminthes *Ascaris* (male and female), *Trichinella*, *Ancylostoma*, *Meloidogyne*
6. Annelida Specimens : *Pheretima*, *Heteronereis*, *Polynoe*, *Aphrodite*, *Chaetopterus*, *Arenicola*, *Tubifex* and *Pontobdella*
7. Arthropoda Specimens : *Peripatus*, *Palaemon* (Prawn), *Lobster*, *Cancer* (crab), *Sacculina*, *Eupagurus* (hermit crab), *Lepas*, *Balanus*, *Cyclops*, *Daphnia*, *Lepisma*, *Periplaneta* (cockroach), *Schistocerca* (locust), *Poeciloceris* (ak-hopper), *Gryllus* (cricket), *Mantis* (praying mantis), *Cicada*, *Forticula* (earwig), Dragon fly, termite queen, bug, moth, beetle, *Polistes* (wasp), *Apis* (honey bee), *Bombyx* (silk moth), *Cimex* (beg bug), *Pediculus* (body louse), *Millipedes*, *Scolopendra* (centipedes), *Palamnaeus* (scorpion), *Aranea* (spider), *Limulus* (king crab)
8. Mollusca Specimens: *Mytilus*, *Ostrea*, *Cardium*, *Pholas*, *Solen* (razor Fish), *Pecten*, *Holiotis*, *Patella*, *Aplysia*, *Doris*, *Limax*, *Loligo*, *Sepia*, *Octopus*, *Nautilus* (complete and T.S.), *Chiton* and *Dentalium*
9. Echinodermata Specimens: *Asterias*, *Echinus*, *Cucumara*, *Ophiothrix*, *Antedon* and *Asterophyton*
10. Hemichordata *Balanglossus*

(B) Study of the following permanent stained preparations:

1. L.S. and T.S. *Sycon*; gemmules, spicules and sponging fibres of *Sycon*, canal system of sponges
2. T.S. *Hydra* (testis and ovary region)
3. T.S. *Fasciola* (different regions)
4. T.S. *Ascaris* (male and female)
5. T.S. *Pheretima* (pharyngeal and typhlosolar regions), Setae, septal nephridia and spermathecae of *Pheretima*.
6. Trachea and mouthparts of cockroach.
7. Statocyst of *Palaemon*.
8. Glochidium larva of *Anodonta*; radula and osphradium of *Pila*.
9. T.S. Star fish (arm).

10. T.S. *Balanoglossus* (through various regions).

(C) Preparation of the following slides:

1. Temporary preparation of *Volvos*, *Paramecium*, Gemmules and spicules of *Sycon*;
mouth parts and trachea of *Periplanata* (cockroach).
2. Preparation of permanent stained whole mounts of *Hydra*, *Obelia*, *Sertularia*, *Plumularia* and *Bougainvillea*.
3. Preparation of mouth parts of Mosquito, House fly and cockroach.

(D) Study of Internal Anatomy

1. Computer, simulated study/ model of :
 - (i) *Earthworm* : Digestive, reproductive and nervous systems
 - (ii) *Pila* : Pallial complex, digestive and nervous system
2. Demonstration of internal anatomy of cockroach : Digestive, reproductive and nervous systems

(E) Cell biology and Genetics:

1. Cell division : Prepared slides of stages of mitosis and meiosis.
2. Salivary gland and polytene chromosomes of *Drosophila*/ *Chironomus*.
3. Temporary squash preparations of onion root tip / grasshopper testis for the study of mitosis using acetocarmine stain.