

I B.Sc .Zoology Syllabus

I B.Sc (Zoo)	PAPER - 1 INVERTEBRATA	
SEMESTER - I		HRS/WK - 8
MAJOR		CREDIT - 4

UNIT - I

Principles of Taxonomy – Binomial nomenclature-rules of nomenclature – classification of the animal kingdom. **PROTOZOA:** General characters and classification up to classes with examples. **Type study- paramecium**, parasitic protozoans [Entamoeba, Trypanosoma and plasmodium]

UNIT - II

PORIFERA: General characters and classification up to classes with examples. **Type study - sycon**, spicules and canal system in sponges. **COELENTERATA:** General characters and classification up to classes with examples. **Type study – Obelia**, polymorphism in coelenterates – corals and coral reefs.

UNIT - III

HELMINTHES: General characters and classification up to classes with examples. **Type study – Taenia solium**. helminthes parasites (Wuchereria bancrofti, Ascaris and Fasciola). **ANNELIDA:** General characters and classification up to classes with examples. **Type study: Nereis**, metamerism in Annelids, parasitic adaptations of Leech.

UNIT - IV

ARTHROPODA: General characters and classification up to classes with examples. **Type study – Prawn**, Peripatus and its affinities, Mouth parts of insects.

UNIT - V

MOLLUSCA: General characters and classification up to classes with examples. **Type study – Fresh water Mussel**, Economic importance of mollusca. **ECHINODERMATA:** General characters and classification up to classes with examples. **Type Study- Sea star**, Echinoderm larvae and their significance.

Reference Books:

- Ekambaranatha Ayyar.M. and T.N. Ananthakrishnan, 1992. Manual of Zoology Vol.1 [Invertebrata],
Viswanathan [Printers and Publishers] Pvt. Ltd.; Madras.
- Jordan, E.L. and P.S.Verma, 1993. Invertebrate Zoology, 12th Edition. S.Chand and Co.Ltd., NewDelhi.
- Kotpal, R.L. 1988-1992 Protozoa, Porifera, Coelenterata, Helminthes, Annelida, Arthropoda, Mollusca, Echinodermata. Rastogi Publications, Meerut.
- Parker and Haswell, 1964. Test Book of Zoology. Vol.1 [Invertebrata]. A.Z.T; B.S.Publishers and distributors, New Delhi.
- L.A Borradile and F.A.Pott. The Invertebrates. Cambridge University Press. UK.
- Adam Sedgwick. 1972 A student text book of Zoology. Vol.I and II. Central book Depot. Allahabad.
- P.S.Dhami and J.K.Dhami. Invertebrate Zoology, S.Chand and Co. New Delhi.
- Hyman L.H. The Invertebrate Vol.I-IV. 1955, McGraw Hill Co. New York.
- Barrington, E.J.W. 1969. Invertebrate structure and function. ELBS Publication.
- Barnes. Invertebrate Zoology. Toppan International Co.

I B.Sc (Zoo)	PAPER – 2 CHORDATA	
SEMESTER - II		HRS/WK - 8
MAJOR		CREDIT - 4

UNIT – I

Salient Features and General classification of Phylum chordata upto orders. Origin of Chordata.- Sub phylum: Prochordata: Type study: Amphioxus (Cephalochordata) - General Characters and affinities of Hemichordata- Balanoglossus & Urochordata- Ascidian.

UNIT –II

Class PISCES General characters and classification up to orders. **Type study: Shark.** Accessory respiratory organs in fishes. **-Class AMPHIBIA** General characters and classification up to orders. **Type study : Frog** - Adaptive features of Anura, Urodela & Apoda. Parental care in Amphibia – Neoteny.

UNIT – III

Class REPTILIA- General characters and classification upto orders. **Type study – Calotes.** Poison apparatus and biting mechanism of poisonous snakes. Identification of poisonous and non – poisonous snakes.

UNIT – IV

Class AVES - General characters and classification upto orders. **Type study –Pigeon** Characters of Archaeopteryx, Ratitae, Migration in birds, Flight adaptation.

UNIT – V

MAMMALIA - General characters and classification upto orders. **Type study – Rabbit.** Egg laying mammals. Dentition in mammals. Aquatic mammals.

Reference Books:

Ekambaranatha Ayyar, M and T.N Anantha Krishnan 1992, A manual of zoology Vol. II [Chordata].

S. Viswanathan [Printers and publishers] Pvt. Ltd., Madras.

Jordan E. L. and P.S. Verma 1995. Chordate Zoology and elements of Animal Physiology. S. Chand and co., New Delhi.

Kotpal R.L. 1992. Vertebrata, Rastogi publication, Meerut.

Nigam. H.C 1983 Zoology of chordates, Vishal publications, Jalandhar.

Waterman, Allyn J. et al. 1971, Chordate Structure and functions, Mac. Millan and co., New York.

Jollie. M. 1968. Chordate Morphology. East west press Pvt. Ltd., New Delhi.
Hyman. L.H. Comparative vertebrate zoology. McGraw Hill co. New York

I B.Sc (Zoo)	CORE PRACTICAL - I INVERTEBRATA AND CHORDATA	
SEMESTER - II		HRS/WK - 3
MAJOR		CREDIT - 3

DISSECTIONS

Cockroach – Digestive and Nervous system, **Prawn** – Nervous system, **Fish** (any one) – Digestive and Arterial system

MINOR PARCTICAL

MOUNTING -Insect Mouth parts : Cockroach, Honey bee, House Fly and Mosquito
Prawn – Appendages, **Shark** - Placoid scales, **Earthworm** – Body setae

SPOTTERS

Study of the following specimens

1.Classify by giving reasons

Paramecium, Sycon, Obelia, Taenia solium, Neries, Prawn, Freshwater mussel, Seastar Amphioxus, Shark, Hyla, Rhacophorus, Calotes, Pigeon, Rat/Rabbit.

2.Adaptations to their respective modes of life

Entamoeba, Trypanosoma, Plasmodium, Corals [any 2], Ascaris, Fasciola, Wuchereria bancrofti, Cheatopterus, Leech, Limulus, Nauplius, Mysis, Zoea, Balanoglossus, Ascidian, Ichthyophis, Draco, sea snake and Bat.

3.Biological significance:

Paramecium conjugation and binary fission, physalia, Trochophore Larva, Peripatus, Sacculina On Crab, Sea Anemone on Hermit Crab, Pearl Oyster, Bipinnaria Larva, Anabas, Hippocampus, Narcine, Echeneis, Arius, Exocoetus, Eel, Amblystoma, Axolotl Larva, Bufo, Cobra, Krait, Russels Viper, Echis Carinata, Turtle, Parrot, Woodpecker, King Fisher and Ant eater

4. Relate structure and function:

Sponge Spicules, Obelia Polyp, Taenia Scolex, Nereis - Parapodium, Book lungs of scorpion/Honey bee sting apparatus, Pedicellaria of Sea star, Ctenoid Scale and Quill Feather of pigeon.

5.Draw labeled sketches:

T.S. of Nereis, T.S. of Leech, Obelia medusa, T.S. of Amphioxus through Pharynx, T.S. through arm of Sea star.

6.Osteology

Skeleton - Pectoral girdles of Frog and Pigeon., Pelvic Girdles of Frog and Pigeon.

Fore and Hind limbs of Frog and Pigeon., Synsacrum of Pigeon. **Dentition** - Dog, Rabbit and Man.

Reference Books:

Verma. P.S. 2011 A Manual of Practical Zoology INVERTEBRATES Chand & Co, Ltd, Ram Nagar -New Delhi.

Verma. P.S. 2011 A Manual of Practical Zoology CHORDATES, Chand & co, Ltd. Ram Nagar – New Delhi.

Jayanpa Sinha . 2010 Advanced Practical Zoology, Books & Allied (p) Ltd. No.1. Subham Plaza IFloor, Calcutta.