

ZOOLOGY SYLLABUS FOR II SEMESTER

PAPER – II: ANIMAL DIVERSITY – BIOLOGY OF CHORDATES

HOURS: 60 (5X12)

Max. Marks: 100

Unit - I

General characters and classification of Chordata upto classes

Protochordata- Salient features of Cephalochordata , Affinities of Cephalochordata.

Salient features of Urochordata

Structure and life history of *Herdmania*

Retrogressive metamorphosis –Process and Significance

Unit - II

Cyclostomata, General characters, Comparison of *Petromyzon* and *Myxine*

Pisces : General characters and classification of Fishes up to orders Added

Scoliodon: External features, Digestive system, Respiratory system, Structure and function of Heart, Structure and functions of the Brain.

Migration in Fishes

Types of Scales

Dipnoi

Unit - III

General characters of Amphibia

Classification of Amphibia up to orders with examples.

- 3.3 *Rana hexadactyla*: External features, Digestive system, Respiratory system, Structure and function of Heart, structure and functions of the Brain

Reptilia: General characters of Reptilia, Classification of Reptilia upto orders with examples

Calotes: External features, Digestive system, Respiratory system, Structure and function of Heart, structure and function of Brain

Identification of Poisonous snakes and Skull in reptiles

Unit - IV

Aves General characters and **classification of Aves up to orders** Added

Columba livia: External features, Digestive system, Respiratory system, Structure and function of Heart, structure and function of Brain

Migration in Birds

Flight adaptation in birds

Unit - V

General characters of Mammalia

Classification of Mammalia upto sub - classes with examples

Comparison of Prototherians, Metatherians and Eutherians

Dentition in mammals

Co-curricular activities (suggested)

- Preparation of charts on Chordate classification (with representative animal photos) and retrogressive metamorphosis
- Thermocol or Clay models of Herdmania and Amphioxus
- Visit to local fish market and identification of local cartilaginous and bony fishes
- Maintaining of aquarium by students
- Thermocol model of fish heart and brain
- Preparation of slides of scales of fishes
- Visit to local/nearby river to identify migratory fishes and prepare study notes
- Preparation of Charts on above topics by students (Eg: comparative account of vertebrate heart/brain/lungs, identification of snakes etc.)
- Collecting and preparation of Museum specimens with dead frogs/snakes/lizards etc., and/or their skeletons
- Additional input on types of snake poisons and their antidotes (student activity).
- Collection of bird feathers and submission of report on Plumology
- Taxidermic preparation of dead birds for Zoology museum
- Map pointing of prototherian and metatherian mammals
- Chart preparation for dentition in mammals

REFERENCE BOOKS

- J.Z. Young, 2006. The life of vertebrates. (The Oxford University Press, New Delhi). 646 pages. Reprinted
- Arumugam, N. Chordate Zoology, Vol. 2. SarasPublication. 278 pages. 200 figs.
- A.J. Marshall, 1995. Textbook of zoology, Vertebrates. (The McMillan Press Ltd., UK). 852 pages. (Revised edition of Parker & Haswell, 1961).
- M. EkambaranathaAyyar, 1973. A manual of zoology. Part II. (S. ViswanathanPvt. Ltd., Madras).
- P.S. Dhami & J.K. Dhami, 1981. Chordate zoology. (R. Chand & Co.). 550 pages.
- Gurdarshan Singh & H. Bhaskar, 2002. Advanced Chordate Zoology. Campus Books, 6 Vols., 1573 pp., tables, figs.
- A.K. Sinha, S. Adhikari & B.B. Ganguly, 1978. Biology of animals. Vol. II. Chordates. (New Central Book Agency, Calcutta). 560 pages.
- R.L. Kotpal, 2000. Modern textbook of zoology, Vertebrates. (Rastogi Publ., Meerut). 632 pages.
- E.L. Jordan & P.S. Verma, 1998. Chordate zoology. (S. Chand & Co.). 1092 pages.
- G.S. Sandhu, 2005. Objective Chordate Zoology. Campus Books, vii, 169 pp.
- Sandhu, G.S. & H. Bhaskar, H. 2004. Textbook of Chordate Zoology. Campus Books, 2 vols., xx, 964 p., figs.
- Veena, 2008. Lower Chordata. (Sonali Publ.), 374 p., tables, 117 figs.