

B.Sc II Semester Syllabus

ZOOLOGY (Optional) 2017-18 Onwards

Total Marks-80

Total Teaching-50hrs.

Biology of Chordates

UNIT-I

Chordates: General characters and classification. **8 hrs**

1. Sub-phylum: Hemichordata- External Characters & Digestive system of Balanoglossus.
2. Sub-phylum: Urochordata- External Characters & Retrogressive metamorphosis in Herdmania.
3. Subphylum: Cephalochordata- External Characters & feeding mechanism in Branchiostoma.
4. Cyclostomata: External Characters & general organisation of Petromyzon & Myxine (Hagfish/Slime).

UNIT-II

Pisces: General characters & Classification of Pisces up to orders **5hrs** with examples. General characters of Chondrichthyes and Osteichthyes. Type study **Scoliodon**- External Characters, Digestive system, Reproductive system and Fish migration.

Amphibia: General characters & classification up to orders with **5hrs** Examples. Type study **Frog**- External characters, Digestive system, Circulatory & Reproductive system. Axolotl larva & its significance.

UNIT-III

Reptilia: General characters & classification up to orders with **5hrs** Examples. Type study **Calotes**- External characters, Digestive system, Circulatory & Reproductive system. Indian poisonous & non-poisonous snakes.

Aves - General characters & Classification up to orders with **10hrs** Examples Type study **Pigeon**- External characters, Digestive System, Respiratory & Reproductive system. Bird migration, Flight adaptations, Flightless birds, Beak & Feet modification.

UNIT-IV

Mammalia: General characters & classification up to orders with **5hrs**
Examples Type study **Rat**-Externals characters, Digestive System. Circulatory, Nervous, Excretory & Reproductive Systems.

Comparative Anatomy:

Origin, development & structure of Heart, Brain **12 hrs**
and integument in Fishes, Amphibians, Reptiles, Aves and Mammals.

PRACTICALS

	Total Practicals -12
1. Classification of Urochordata, Cephalochordata, Cyclostomes <u>Examples:</u> Balanoglossus, Herdmania, Branchiostoma, Peteromyzon.	01
2. Classification of Fishes - <u>Examples:</u> Scoliodon, Pristis, Sphyrna, Catla catla, Labeo rohita, Hippocampus, Eel, Exocoetus & Synaptura.	01
3. Classification of Amphibia - <u>Examples:</u> Frog, Toad, Ichthyophis, Ambystoma, Axolotl Larva & Rhacophorous.	01
4. Classification of Reptilia - <u>Examples:</u> Calotes, Hemidactylus, Chaemaleon, Mabuya Draco, Naja naja, Python, Viper, Turtle and Crocodile.	01
5. Classification of Aves - <u>Examples:</u> Psittacula, Owl, Woodpecker, Pigeon and Passer domesticus.	01
6. Classification of Mammalia - <u>Examples:</u> Sorex, Bat, Loris, Pangolin, Hystrix, Herpetes & Funambulus.	01
7. Study of Comparative Anatomy: Heart and Brain in Fishes, Amphibians, Reptiles, Aves and Mammals	02
8. Explanation & Demonstration in Bony fish/Shark. a). External characters b). Digestive system c). Reproductive system d). Mounting of Brain	04

NOTE:

1. With the help of Charts/Models/Diagrams/Printouts & Xerox Sheets are used in practical's demonstration.
 2. As per UGC guidelines **Only one** species to be demonstrated by Faculty & students should not do any dissection.
 3. Students are supposed to draw neat labelled diagrams & write The explanation in their journal.
 4. In practical examination question no I & II are put Charts/ Models/ Diagrams/ Printouts & Xerox Sheets of the system- Students has to identify& write the explanation in their Examination paper.
 5. Compulsory Study Tour/ Field visit to study Animal diversity. (Submission of project report carries- 5 marks).
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REFERENCE BOOKS

1. Modern Text Book of Zoology Vertebrate-R.L.Kotpal.
2. Chordata – Dhami & Dhami.
3. Vertebrate- Majapuria.
4. Functional Organization of Vertebrate-- H Nigam & R.Sobti- Shoban Lal Nagin Chand & Co.
5. A manual of Zoology Vertebrates- M.Ekambarnath Ayyar & Swaminathan Ayyar S. Vishwanath Publisher.
6. The Vertebrates Pisces to Mammalia, Hyman L.H. McGraw Hill Co
7. The Vertebrates – Hyman et al.
8. Text Book of Zoology – Parker T.J. & Haswell W.A. Macmillan Co. London.
9. Biology of Chordates by Dr Harish .C. Nigam.Vishal Publication Lucknow.