

SECOND SEMESTER THEORY**Z. 2.Chordate Biology and Comparative Anatomy**

64 Hrs

Code : **Z-2**

Univ Code :

Contact Hours :64

Work load : 4 hours per week

Credit Points :

Evaluation: Continuous Internal Assessment - 30 marks  
 Semester and Examination - 70 marks

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|-----|--|---|-----|
| 1.  | General characters & organization of chordate & brief classification up to class.  | 2 | Hrs |
| 2.  | Protochordata  | 5 | Hrs |
|     | i. Features of Hemichordata  |   |     |
|     | ii. Features of Urochordata  |   |     |
|     | iii. Features of Cephalochordata   |   |     |
|     | iv. Retrogressive metamorphosis and significance in Ascidia.   |   |     |
| 2.1 | General characters of cyclostomes.   |   |     |
| 3.  | Class : Fishes   | 9 | Hrs |
|     | • General characters and classification upto subclasses (Osteichthyes) with examples   |   |     |
|     | • Type study-Scoliodon; morphology, circulatory system, digestive system & urinogenital system.  |   |     |
|     | • Scales in fishes & migration of fishes   |   |     |
|     | • A brief note (characters & distribution) on lung fishes.   |   |     |
| 4.  | Class : Amphibia   | 8 | Hrs |
|     | General characters & classification upto orders with examples  |   |     |
|     | □ Type study of frog : vertebral column (division of vertebral column , atlas ,typical 8 <sup>th</sup> ,9 <sup>th</sup> & 10 <sup>th</sup> ) |   |     |
|     | □ Appedicular skeleton : Girdles & limbs   |   |     |
| 5.  | Class: Reptilia  | 6 | Hrs |
|     | • General characters & classification upto order(living orders) with examples  |   |     |
|     | • Identification of poisonous & non poisonous snakes   |   |     |
| 6.  | Class : Aves   | 9 | Hrs |
|     | • General characters with classification upto orders mentioned   |   |     |
|     | • Archaeornithes   |   |     |
|     | <b><u>Neornithes</u></b>   |   |     |
|     | a. Paleognathae ( struthiformes, casauriformes,apterygiiformes)  |   |     |
|     | b. Neo-gnathae (falconiformes,columbiformes,cuculiformes, Psittaciformes, strigiformes,coraciformes, Passeriformes)                          |   |     |
|     | • Flight adaptation  |   |     |
|     | • Migration : definition, kinds of migration.  |   |     |
| 7.  | Class : Mammalia   | 9 | Hrs |
|     | • General characters with classification upto subclasses (protheria, theria- metatheria & eutheria) with examples                            |   |     |
|     | • <b>Orders:</b> Insectivora, chiroptera, primates, foliodata, rodentia, cetacea, ,carnivora, perissidactyla, arteodactyla, proboscida)      |   |     |
|     | • Detailed study of Rat : Morphology & anatomy( excluding skeletal system)   |   |     |

II.	Comparative anatomy	13	Hrs
	◆ General structure of integument & its functions	2	Hrs
	◆ Comparison of the digestive systems of scoliodon, frog, calotes, pigeon & rabbit		
	◆ Comparison of Heart & aortic arches in chordates ( scoliodon, frog, calotes, pigeon & rabbit )	6	Hrs
	◆ Comparison of Brain of chordates	5	Hrs

PRACTICAL ZP-2  
BASED ON PAPER Z-2:  
BIOLOGY OF CHORDATA AND COMPARATIVE ANATOMY

.1	Protochordata	:	Hemichordata : Balanoglasus Urochordata : Ascidian Cephalochordata : Amphioxus
2.	Cyclostomata	:	Petromyzon/ Myxine
3.	Pisces	:	Chondrichthyes: Shark, Torpedo, Sphyrna, Pristis, Osteichthyes : Mystis, Labeo, Rohita, Cat fishes,(Corps and cat fishes)
4.	Amphibians	:	Anura: Frog,Hyla, Rhacoporous, Urodela: Salamander, Newten, Axolotl, Apoda: Ichthyophis
5.	Reptilia:	:	Lacertilia: Gecko, Calotes, Wall lizard, <b>Ophidia: Cobra, Rat snake, Viper etc.,</b> <b>Chelonia: Turtle, Testudo, Chelonia,</b> <b>Crocodylia: Corodile, Alligator</b>
6.	Aves	:	Archeornithes: Archaopteryx Neornithes: Grey Heron, Pond Heron, Little egret, Siberian Crane, Common Crow, Pigeon, Owl, King Fisher, Jacana, wood Pecker
7.	Mammalia	:	<b>Prothetia : Echidna, Platipus</b> <b>Metatheria : Kangaroo</b> <b>Theria : Squirrel, Rabbit, Bat, Loris, Monkey,</b>
8.	<u>COMPARATIVE ANATOMY</u>		<b>Study of scales in fishes</b>

**Demonstration/ charts of digestive system of fish to mammals**  
**Demonstration /charts of heart, aortic arches of fish to mammals.**  
**Demonstration /charts of Brain of fish - mammals**  
**Study of skeletal system of frog as per theory syllabus.**

**FIELD ORIENTED ACTIVITIES:**

- 1.** Visit to nearby garden/ forest land/crop land/grass land/river/stream/sea/sanctuaries/national park to study the animal diversity.
- 2.** Bird watching and preparation of checklist of birds of college campus.
- 3.** Collect of local edible fishes.