

# CLUSTER UNIVERSITY SRINAGAR

## ZOOLOGY

### Semester - I

#### ANIMAL DIVERSITY

(Credits: Theory-4, Practicals-2)

## THEORY

### Unit 1

**1.1 Protista :** General characters and classification up to classes. Locomotion in Protozoa

**1.2 Phylum Porifera :** General characters and classification up to classes; Canal System in Sponges.

**1.3 Phylum Cnidaria :** General characters and classification up to classes; Polymorphism in Hydrozoa

**1.4 Phylum Helminthes :** General characters and classification of Platyhelminthes up to classes. Life history of *Taenia solium* General characters and classification of Nematelminths up to classes. Life history of *Ascaris lumbricoides*. Parasitic Adaptations.

### Unit 2

**2.1 Phylum Annelida:** General characters and classification up to classes; Metamerism in Annelida

**2.2 Phylum Arthropoda:** General characters and classification up to classes; Vision in Insecta. Metamorphosis in Insects.

**2.3 Phylum Mollusca:** General characters and classification up to classes; Torsion in Gastropods

**2.4 Phylum Echinodermata :** General characters and classification up to classes; Water-vascular system in Asteroidea;

### Unit 3

**3.1 Protochordates** General features and Phylogeny of Protochordates.

**3.2** General characters and classification of Urochordates and Cephalochordates.

**3.3 Agnatha.** General features and classification of Agnatha.

**3.3 Pisces. General** characters of Pisces and Classification of Chondrichthyes and Osteichthyes upto orders. Economic importance of Fishes.

### Unit 3

**3.1 Amphibia:** General characters and Classification up to orders; Parental care in Amphibians.

**3.2 Reptiles:** General characters and Classification up to orders; Poisonous and Non-poisonous snakes, Biting mechanism in snakes

**3.3 Aves:** General characters and Classification up to orders; Flight adaptations in birds

**3.4: Mammals:** General characters and Classification up to orders; Origin and Adaptive Radiation In mammals.

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## Books recommended;

- a. Ruppert and Barnes, R.D. (2006). *Invertebrate Zoology*, VIII Edition. Holt Saunders International Edition.
- b. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). *The Invertebrates: A New Synthesis*, III Edition, Blackwell Science
- c. Young, J. Z. (2004). *The Life of Vertebrates*. III Edition. Oxford university press.
- d. Pough H. *Vertebrate life*, VIII Edition, Pearson International.
- e. Hall B.K. and Hallgrímsson B. (2008). *Strickberger's Evolution*. IV Edition. Jones and Bartlett Publishers Inc.
- f. Dhama.P.S and Dhama, J.K .*Invertebrate Zoology* .R. Chand &Co.
- g. Kotpal, R. L Modern Textbook of Zoology, Invertebrates.3rd Edition 2014, Rastogi Publications.
- h. Kotpal,R.L Modern Textbook of Zoology, Vertebrates, Rastogi Publications.  
L.Hymen, The Invertebrates.McGraw Hill.
- i. Jordan. E. L and Verma, P. S. Chordate Zoology. 2014.S. Chand & Company, Ltd.

## PRACTICAL (CREDITS 2)

### 1. Study of the following specimens:

*Amoeba, Euglena, Plasmodium, Paramecium, Sycon, Hyalonema, and Euplectella, Obelia, Physalia, Aurelia, Tubipora, Metridium, Taenia solium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Julus, Periplaneta, Apis, Chiton, Dentalium, Pila, Unio, Loligo, Sepia, Octopus, Pentaceros, Ophiura, Echinus, Cucumaria and Antedon, Balanoglossus, Herdmania, Branchiostoma, Petromyzon, Sphyrna, Pristis, Torpedo, Labeo, Exocoetus, Anguilla, Ichthyophis/Ureotyphlus, Salamandra, Bufo, Hyla, Chelone, Hemidactylus, Chamaeleon, Draco, Vipera, Naja, Alligator, Crocodylus, Gavialis, Any six common birds from different orders, Sorex, Bat, Funambulus, Loris Study of Local fauna Trout, Schizothorax and Ancistrodon*

### 2. Study of the following permanent slides:

T.S. and L.S. of *Sycon*, Study of life history stages of *Taenia*, T.S. of Male and female *Ascaris*

### 3. Dissection of following animals to expose different systems

- a. Reproductive System of *Pheretima*.
- b. Appendages of Prawn
- c. Nervous system of *Pila*

### 4. Key for Identification of poisonous and non-poisonous snakes

5. An “**animal album**” containing photographs, cut outs, with appropriate write up about the above mentioned taxa. Different taxa/ topics may be given to different sets of students for this purpose.