

ZY3B03U [P] Practical 3
ANIMAL DIVERSITY- NON CHORDATA

36 hrs.
Credit 1

Scientific Drawing:-

Make scientific drawings of 5 locally available invertebrate specimens belonging to different phyla.

Anatomy:-

Study of sections. (Any two)

1. Hydra.
2. Ascaris
3. Earthworm
4. Fasciola

Dissections

1. Prawn - Nervous system
2. Cockroach - Nervous system

Mounting:-

1. Nereis - Parapodia
2. Cockroach - Salivary glands
3. Mouth parts ♦ Plant bug/ House fly / Mosquito. (Any Two)
4. Prawn appendages.

Identification:-

General identification- The students are expected to identify the following Phylum ♦ wise number of animals by their generic names and 20% of these by their specific names. Protista -2, Porifera-1, Coelenterata-2, Platyhelminthes-1, Annelida-2, Arthropoda-3, Mollusca- 2, Echinodermata-2

Taxonomic identification with key:-

Identification of insects up to the level of order.

SEMESTER IV

ZY4B04U CORE COURSE 4
ANIMAL DIVERSITY ♦ CHORDATA

54 Hrs
3 Credits

Objectives

1. To make the student observe the diversity in chordates and their systematic position.
2. To make them aware of the economic importance of some classes.

MODULE I

Introduction

(1 Hr)

Phylum Chordata - General classification

(Classification up to order ♦ Sub phylum, Super class, Class, Subclass, Order)

1. Sub phylum : Urochordata

(3 Hrs)

Class I Larvacea Eg. Oikopleura

Class II Ascidiacea Eg: Ascidia (Mention Retrogressive Metamorphosis)

Class III Thaliacea Eg: Doliolum

2. Sub phylum: Cephalochordata

(2 Hrs)

Example - **Amphioxus**

Core Readings

Ekambaranatha Iyer 2000 A Manual of Zoology Vol. II .S. Viswanathan and Co.

Young J.Z, 1981, The Life of Vertebrates Oxford University Press.

Young J.Z. 2006 The life of Vertebrates Oxford University Press (Third Ed.) India Ed.

MODULE II

3. Sub phylum: Vertebrata

4. Division 1 ♦ Agnatha

(2 Hrs)

Class I Ostracodermi Eg: Cephalaspis

Class II Cyclostomata Eg: Petromyzon

Division 2 ♦ Gnathostomata

(10 Hrs)

Super class Pisces

Class: Chondrichthyes

Sub class - Elasmobranchi Eg: Narcine

Sub class Holocephali Eg: Chimaera

Class: Osteichthyes

Sub class ♦ Choanichthyes

Order 1 Crossopterigii Eg: Latimeria

Order 2 Dipnoi Eg: Lepidosiren

Sub class: - Actinopterygii

Super order 1. Chondrostei Eg: Acipenser

Super order 2. Holostei Eg: Amia

Super order 3. Teleostei Eg: Sardine

General topics

1. Accessory respiratory organs in fish.
2. Parental care in fishes.
3. Scales in fishes.
4. Migration in fishes
5. Common culture fishes of Kerala
6. Lung fishes

Core Readings

Ekambaranatha Iyer 2000 A Manual of Zoology Vol. !!.S. Viswanathan and Co.

Young J.Z. 2006 The life of Vertebrates Oxford University Press (Third Ed.) India Ed.

Jhingran 1977, Fish and Fisheries of India, Hindustan Publishing Co.

MODULE III

Super class: Tetrapoda

(10 Hrs)

Class Amphibia

Type Frog

Order I Anura

Eg: Hyla

Order II Urodela

Eg: Amblystoma (Mention
axolotl larva and neotony)

Order III Apoda

Eg: Ichthyophis.

Class Reptilia

(4 Hrs)

Sub class I: Anapsida

Order Chelonia

Eg: Chelone

Sub class II: Parapsida

Eg: Ichthyosaurus

Sub class III: Diapsida

Order I Rhynchocephalia

Eg: Sphenodon

Order II Squamata

Eg: Chamaleon

Sub class IV: Synapsida

Eg: Cynognathus

General topic

Identification of poisonous and non poisonous snakes

Class Aves

4 Hrs

Sub class I: Archeornithes

Eg: Archaeopteryx (Affinities)

Sub class II: Neornithes

Super order I: Palaeognathe

Eg: Struthio

Super order II: Neognathe

Eg; Brahminy kite

General topics

1. Migrations in birds
2. Flight adaptations in birds

Core Readings

Jordan E L and .P.S. Verma, 2002 Chordate Zoology S. Chand and Co. New Delhi.

Ekambaranatha Iyer 2000 A Manual of Zoology Vol.II S. Viswanathan and Co.

MODULE IV

Class Mammalia

(18 Hrs)

Type: Rabbit

Sub class I: Prototheria	Eg: Echidna
Sub class II: Metatheria	Eg: Macropus
Sub class III: Eutheria	
Order 1. Insectivora	Eg: Talpa
Order 2 Dermoptera	Eg: Galeopithecus
Order 3. Chiroptera	Eg: Pteropus
Order 4. Primates	Eg: Loris
Order 5 Carnivora	Eg: Panthera
Order 6 Edentata	Eg: Armadillo
Order 7 Pholibota	Eg: Manis
Order 8 Proboscidea	Eg: Elephas
Order 9 Hydracoidea	Eg: Procavia
Order 10 Sirenia	Eg: Dugong
Order 11 Perissodactyla	Eg: Zebra
Order 12 Artiodactyla	Eg: Cameleus
Order 13 Lagomorpha	Eg: Oryctolagus
Order 14 Rodentia	Eg: Porcupine
Order 15 Tubulidentata	Eg: Orycteropus
Order 16 Cetacea	Eg: Delphinus

General topics

1. Dentition in Mammals
2. Aquatic Mammals

Core Readings

Jordan E L and .P.S. Verma, 2002 Chordate Zoology S. Chand and Co. New Delhi.
Ekambaranatha Iyer 2000 A Manual of Zoology Vol. !!.S. Viswanathan and Co.
Zoological Society of Kerala Study material. *Animal Diversity* 2002

Selected Further Readings

Ekambaranatha Iyer 2000 A Manual of Zoology Vol. !!.S. Viswanathan and Co.
Jhingran 1977, Fish and Fisheries of India, Hindustan Publishing Co.
Jordan E L and .P.S. Verma, 2002 Chordate Zoology S. Chand and Co. New Delhi.
Kotpal R.L. 2000, Modern Text Book of zoology, Vertebrates, Rastogi Publications, Meerut.
Nigam and Sobti 2000, Functional Organization of Chordates. Shoban Lal Nagin Chand and Co. New Delhi.

Young J.Z, 1981, The Life of Vertebrates Oxford University Press.

Young J.Z. 2006 The life of Vertebrates Oxford University Press (Third Ed.) India Ed.