

GOVERNMENT DEGREE COLLEGE BARAMULLA

Semester 2nd

Major/Minor

Subject: Zoology

Course: Introduction to Chordates

Course Code

BZ022C201

CREDITS: 6 (THEORY: 4; PRACTICAL: 2)

COURSE OBJECTIVE: *This course is designed to give a learner the fundamental understanding of the diversity of the phylum chordata with emphasis on their origin, key characteristics, classification, distribution and functioning.*

LEARNING OUTCOME: *After the completion of this course, a student will be able to*

- Demonstrate the identification and classification of chordates*
- Comprehend and explain evolutionary relationship among the various chordate groups*
- Understand the ecological distribution and evolutionary divergence of chordates*

THEORY: (4 CREDITS)

UNIT I: ORIGIN, CLASSIFICATION AND DISTRIBUTION OF CHORDATES

- 1.1 Origin & evolution of chordates
- 1.2 General characters of chordates
- 1.3. Outline classification of the phylum Chordata
- 1.4 Distribution of vertebrates in different Zoogeographical realms

UNIT II: PROTOCHORDATES AND PISCES

- 2.1 General characters and classification of protochordates up to order level
- 2.2 Retrogressive metamorphosis in urochordates
- 2.3 General characters and classification of Pisces up to order level
- 2.4 Migration and osmoregulation in fishes

UNIT III: AMPHIBIANS AND REPTILES

- 3.1 General characters and classification of amphibians up to order level
- 3.2 Parental care in amphibians
- 3.3 General characters and classification of reptiles up to order level
- 3.4 General features of poisonous and non- poisonous snakes

UNIT IV: AVES AND MAMMALS

- 4.1 General characters and classification of aves up to order level
- 4.2 Flight adaptations in birds
- 4.3 General characters and classification of mammals up to order level
- 4.4 Adaptive radiation in mammals with reference to locomotory organs.

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PRACTICALS: (2 CREDITS)

SECTION I:

Classification and diagnostic features of museum specimens / slides belonging to following groups available in respective museums:

PROTOCHORDATA, Herdmania, Branchiostoma

PISCES- Scoliodon, Labeo, Cyprinus, Shizothorax, Salmon

AMPHIBIA- Ichthyophis, Necturus, Bufo, Hyla, Alytes, Salamandra

REPTILIA- Uromastix, Vipera, Naja,

AVES – common birds from different orders

MAMMALIA- Bat, Funambulus, Loris, Herpestes

SECTION II:

Dissections: alimentary canal, cranial nerves of carp / Scoliodon, Identification of poisonous and non-poisonous snakes. Mount preparation of weberian ossicles of carp, Study of different zoogeographical realms through chart & short films. Field visits for observation and understanding of local fauna

SUGGESTED BOOKS:

1. Chordate Zoology E. L. Jordan P. S. Verm. S. Chand and company, New Delhi
2. Life of Vertebrates J. Z. Young New York Oxford University Press.
3. Text Book of Zoology Vol-11 Parker and Haswell AZTBS Publishers New Delhi
4. The Vertebrate Body Romer and Parso Saunders Company
5. Chordate Zoology P S Dhama J K OHowu/Pradeep Publications, Jalandhar
6. Comparative Animal Physiology C.L. Propper Satish Book Enterprise Agra
7. General and Comparative Physiology Koor Prentice Hall of India Pvt. Ltd.
8. Modern Text Book of Zoology (Vertebrates) R L Kotpal Rastogi Publications
9. Animal Physiology. Mohan P Arora Himalaya Publishing House, New Delhi
10. Manual of practical Zoology Chordates P S Verma S. Chand and Company Ltd.
11. Animal Physiology Nilsen Cambridge University Press
12. Comparative Anatomy of Vertebrates K.K.Saxena and Saxena Viva Books Pvt.Ltd.
13. *Practical Zoology: Vertebrate (English, Rastogi Publications, S.S.Lal) A Manual of Practical Zoology by P. S. Verma*

GOVERNMENT DEGREE COLLEGE BARAMULLA

SEMESTER – 2nd

SKILL ENHANCEMENT COURSE (SEC)

Department of Zoology

Title: APICULTURE II

Course Code: BZ022S202

(CREDITS (4): THEORY – 02, PRACTICALS -02)

Contact

hours: 32 (T) + 32 (L)

Course Objectives: To impart skill regarding Apiculture and to promote it as a skill course so that people are educated regarding the commercial aspects of Apiculture.

Learning outcomes: After thoroughly understanding the course the student should be able to: learn basic Apiculture skills and demonstration and identification of different species of extraction of honey and its processing; and Importance of Honey bees in rural Economy.

THEORY (2 CREDITS)

**Unit I: Bee Keeping I
Hours)**

(16

- 1.1 Present scenario and future of Bee keeping in India.
- 1.2 Requirements of commercial bee keeping.
- 1.3 Types of Bee hives.
- 1.4 Traditional bee keeping, modern bee keeping and urban or backyard beekeeping.

Unit II: Bee Keeping II

(16 Hours)

- 2.1. Methods of honey harvesting.
- 2.2 Processing and preservation of honey
- 2.3 Different species of Honey Bees
- 2.4 Social behavior of Honey bees (Attack and dance)

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PRACTICAL (2 CREDITS)
Hours)

(32

1. Mouth parts of honey bee.
2. Sting apparatus of honey bee.
3. Demonstration of honey extraction
4. Visit to honey processing centre.

SUGGESTED READINGS

1. Prost, P. J. (1962). Apiculture. Oxford and IBH, New Delhi.
2. Bisht D.S., Apiculture, ICAR Publication.
3. Singh S., Beekeeping in India, Indian council of Agricultural Research, New Delhi

GOVERNMENT DEGREE COLLEGE BARAMULLA

SEMESTER – 1st

Multidisciplinary Course

Subject: Zoology

Title: Basic Pathology

Course code: BZO22M103

(CREDITS (3): THEORY – 03

Contact hours: 48 (T)

Course objectives: To provide general information to students about various diseases

*To provide information to students about cause, symptoms, Diagnosis and treatment of various Diseases.

Learning Outcomes: After thoroughly understanding the course, the students should be able to

- Learn about commonly occurring diseases, pathogens and their preventive measures
- To protect themselves from various diseases & suggest others also as well.

UNIT – 1: BASIC PATHOLOGY -I

1. Diseases –General Introduction & Classification (Communicable & Non Communicable Diseases).
2. Bacterial Diseases: Tuberculosis and Typhoid.
3. Protozoan Diseases: Malaria.

UNIT – 2: BASIC PATHOLOGY -II

1. Viral diseases: AIDS and Hepatitis
2. Fungal diseases: Ringworm.
3. Helminth diseases: Ascariasis.

UNIT – 3: BASIC PATHOLOGY –III

1. Life style Diseases – Hypertention & Diabeties Mellitus.
2. Hormone deficiency diseases –Gigantism & Diabities Insipidus.
3. Autoimmune diseases: Rheumatoid arthritis.