

UNIVERSITY OF KOTA, KOTA
SYLLABUS AND COURSE SCHEME
ACADEMIC YEAR: 2022-23
BACHELOR OF SCIENCE- ZOOLOGY SEMESTER III



B. Sc. Semester III

Z- 301. Paper I: Animal Diversity - III (Protochordata to Agnatha)

Z- 302. Paper II: Biochemistry and Immunology

Z- 303. Practical: Exercise based on papers I and II.

Z- 301 Paper I Animal Diversity - III (Protochordata to Agnatha)

UNIT-I

1. Chordata: Primary chordate characters
2. Protochordata (invertebrate chordates), concept of invertebrate and nonchordates.
3. Salient features and outline classification of Protochordata.
4. Affinities of Protochordata.

UNIT-II

1. Hemichordata: General characters and classification up to class level.
2. **Balanoglossus**: Habit, habitat, external features, coelom, body wall, digestive & skeletal systems.
3. **Balanoglossus**: Circulatory, respiratory, excretory, nervous and sense organs, reproductive system, Tornaria larva.
4. Affinities of Hemichordata.

Unit - III

1. Urochordata: General characters and classification up to class level.
2. **Herdmania**: Habit, habitat, external features, general anatomy, body wall, digestive & skeletal systems.
3. **Herdmania**: Circulatory, respiratory, excretory, nervous and sense organs, reproductive system, Ascidian larva and its metamorphosis.
4. Affinities of Urochordata.

UNIT-IV

1. **Cephalochordata**: General characters and classification up to class level.
2. **Branchiostoma** (Amphioxus): Habit, habitat, external features, general anatomy, body wall, digestive, skeletal systems.
3. **Branchiostoma** (Amphioxus): Circulatory, respiratory, excretory, nervous and sense organs, reproductive system, Larva.
4. Affinities of Cephalochordata.

UNIT- V

2. Vaccines; hepatitis vaccine, attenuation (oral polio vaccine), Antivenoms.
3. Organ transplants: Various types of transplant (allograft, xenograft, autograft), major histocompatibility complex.

Z- 303 Practical (Exercise based on papers I and II)

1. Study of animal diversity through museum specimens:

Balanoglossus, Herdmania, Doliolum, Salpa, Oikopleura, Amphioxus, Petromzon, Myxine, Bdellostoma, ammocoete larva.

2. Study of sections of organs and developmental stages:

Hemichordata - T.S. through proboscis, collar and trunk regions of *Balanoglossus*, tornaria larva.

Urochordata: Pharyngeal wall, spicules and tadpole larva of *Herdmania*.

Cephalochordata: T.S. of *Branchiostoma* through oral hood, pharynx, gonads and caudal region.

3. Dissections: Through Chart / Model / Photograph / CD

3. a. Major –

Balanoglossus – Coelom, digestive and nervous system.

Herdmania - General anatomy, digestive and respiratory systems.

Branchiostoma - General anatomy, digestive, reproductive and nervous system.

3. b. Minor –

Spicules and pharyngeal wall of *Herdmania*, W. M. of *Branchiostoma*.

4. Biochemistry

Qualitative estimation of --

(1) Protein (2) Fat (3) Carbohydrate (4) Catalase enzyme in animal tissue.

5. Immunology

(a) ELISA test (b) Elementary knowledge about Immunological tests.

B.Sc. (Semester-III) - Zoology Practical Examination 2019

Distribution of Marks

Time – 4hrs	Max. Marks–50
1. Major Dissection - Through Chart / Model / Photograph / CD	05
2. Minor Dissection - Through Chart / Model / Photograph / CD	04
3. Slide Preparation	04
4. Biochemical exercise	04

5. Immunological exercise	03
6. Spots (10 X 2)	20
7. Record	05
10. Viva-voce	05
Total	50