PARVATHANENI BRAHMAYYA
SIDDHARTHA COLLEGE OF ARTS & SCIENCE
Autonomous
Siddhartha Nagar, Vijayawada–520010
Re-accredited at 'A+' by the NAAC

23ZOMAP121: ANIMAL DIVERSITY BIOLOGY OF NON-CHORDATES LAB

Offered to: BSc. Honours (Zoology). **SEMESTER: II** Credits: 1

Course Type: Major 3 (P) 30Hrs Year of Introduction: 2023 -2024

OBJECTIVES

1. Students should be able to classify and identify major groups of non-chordates, understanding the diversity within phyla such as arthropods, mollusks, annelids, echinoderms, and others.

2. Students should comprehend the structural adaptations and physiological processes in non-chordates, including diverse forms of locomotion, feeding strategies, and sensory mechanisms.

3. Develop an understanding of the life cycles, reproductive strategies, and developmental processes of non-chordates, recognizing variations among different taxa.

4. Gain knowledge about the ecological roles non-chordates play in various ecosystems, their interactions with other organisms, and their contributions to nutrient cycling.

5. Understand the evolutionary relationships of non-chordates within the broader context of the animal kingdom, recognizing key adaptations.

CO1. Demonstrate proficiency in identifying and classifying diverse protozoan species using microscopic techniques.
CO2. They will acquire hands-on skills in collecting, preparing, and examining sponge specimens through microscopic and macroscopic techniques.
CO3. At the conclusion of this course, students will have developed practical skills in the identification and classification of various cnidarian species.
CO4. Students will learn arthropod & Mollusca identification and gain practical skills in specimen preparation.
CO5. Identify and analyze the larval stages of Echinodermata, honing practical skills in specimen observation and microscopic examination, preparing them for contributions to marine biology and evolutionary research.

CO-PO MATRIX							
CO-PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
CO1					H		
CO2					H		
CO3					H		
CO4					H		
CO5					H		

SYLLABUS:

Study of museum slides / specimens / models (Classification of animals up to orders)

- Protozoa: Amoeba, Paramoecium, Paramoecium Binary fission and Conjugation, Vorticella, Entamoeba histolytica, Plasmodium vivax
- Porifera: Sycon, Spongilla, Euspongia, Sycon- T.S & L.S, Spicules, Gemmule
- Coelenterata: Obelia – Colony & Medusa, Aurelia, Physalia, Velella, Corallium, Gorgonia, Pennatula
- Platyhelminthes: Planaria, Fasciola hepatica, Fasciola larval forms – Miracidium, Redia, Cercaria, Echinococcus granulosus, Taenia solium, Schistosoma haematobium
- Nemathelminths: Ascaris (Male & Female), Drancunculus, Ancylostoma, Wuchereria
- Annelida: Nereis, Aphrodite, Chaetopteurs, Hirudinaria, Trochophore larva
- Arthropoda: Cancer, Palaemon, Scorpion, Scolopendra, Sacculina, Limulus, Peripatus, Larvae - Nauplius, Mysis, Zoea, Mouth parts of male &female Anopheles and Culex, Mouthparts of Housefly and Butterfly.
- Mollusca:Chiton, Pila, Unio, Pteredo, Murex, Sepia, Loligo, Octopus, Nautilus, Glochidium larva
- Echinodermata: Asterias, Ophiothrix, Echinus, Clypeaster, Cucumaria, Antedon, Bipinnaria larva
- Hemichordata: Balanoglossus, Tornaria larva

Dissections:

Computer - aided techniques should be adopted or show virtual dissections Dissection of edible (Prawn/Pila) invertebrate as per UGC guidelines

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

(I) Semester End Examination Model Paper 35M

1. Dissect and exhibit the Nervous system of Prawn. 10M.

2. Draw a neat labeled diagram of Pila. 8M

3. Identify the following specimens 4x3=12M

A. Euspongia

B. Taenia solium

C. Ascaris (Male)

D. Tornaria larva

5. Record +Viva-voce 5M

(II) Continuous Assessment (Internal) 15M

15 marks for the continuous assessment (Day to day work in the laboratory shall be evaluated for 15 marks by the concerned laboratory teacher based on the regularity/ record/viva). Laboratory teachers are mandated to ensure that every student completes 80%-90% of the lab assessments.

TOTAL: (I)+(II) = 50 MARKS

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