ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

II SEMESTER **ZOOLOGY**  TIME:3 Hrs/Week

Z-Ma1-2501(3) **ANIMAL DIVERSITY-I BIOLOGY OF NON-CHORDATES** Marks:100

w.e.f. 2023-24 admitted batch (23AK) **(Algae, Fungi, Lichens and Bryophytes)**

# LEARNING OBJECTIVES:

* To understand the taxonomic position of protozoa to helminthes.
* To understand the general characteristics of animals belonging to protozoa to hemi chordata.
* To understand the structural organization of animals phylum from protozoa to hemi chordata.
* To understand the origin and evolutionary relationship of different phyla from protozoa to hemi chordata.
* To understand the origin and evolutionary relationship of different phylum from annelids to hemichordates.

**LEARNING OUTCOMES:** By the completion of the course the graduate should able to –

* Describe concept of animal kingdom classification and general characters of Protozoa
* Classify Porifera and Coelenterata with taxonomic keys
* Classify Phylum Platy & Nemathelminthes using examples, parasitic adaptation
* Describe Phylum Annelida & Arthropoda using examples and economic importance of vermicomposting & economic importance of insects.
* Describe Mollusca, Echinodermata & Hemi chordata with suitable examples in relation to the phylogeny

**UNIT – I:**

* 1. Whittaker’s five kingdom concept and classification of Animal Kingdom.
  2. Protozoa General Characters and classification up to classes with suitable examples
  3. Protozoa Locomotion & nutrition
  4. Protozoa reproduction

***Activity: Assignment /Seminar on the above***

***Evaluation: Marks to be awarded for written and oral presentations***

# UNIT –II:

* 1. Porifera General characters and classification up to classes with suitable examples
  2. Canal system in sponges
  3. Coelenterata General characters and classification up to classes with suitable examples
  4. Polymorphism in coelenterates & Corals and coral reefs

***Activity: Assignment /Seminar /Quiz/Project on the above***

***Evaluation: Evaluation of Written part + Evaluation of oral Presentation, Assessment of students in Quiz participation and Ranking - Evaluation of Project Report and oral presentation***

# UNIT – III:

* 1. Platyhelminthes General characters and classification up to classes with suitable examples
  2. Parasitic Adaptations in helminthes
  3. Nemathelminthes General characters and classification up to classes with suitable examples
  4. Life cycle and pathogenicity of *Ascaris lumbricoides*

***Activity: Assignment /Seminar /Quiz/Project/Peer teaching on the above***

***Evaluation: Instructor supposed to prepare a detailed Rubrics for the evaluation of the above activity***

# Z-Ma1-2501(3) ::2::

# UNIT – IV:

* 1. Annelida General characters and classification up to classes with suitable examples
  2. Vermiculture - Scope, significance, earthworm species, processing, Vermicompost, economic importance of vermicompost
  3. Arthropoda General characters and classification up to classes with suitable examples
  4. *Peripatus* - Structure and affinities

***Activity: Assignment /Seminar /Quiz/Project/Peer teaching on the above***

***Evaluation: Instructor supposed to prepare a detailed Rubrics for the evaluation of the above activity***

# UNIT – V:

* 1. Mollusca General characters and classification up to classes with suitable examples
  2. Pearl formation in Pelecypoda
  3. Echinodermata General characters and classification up to classes with suitable examples Water vascular system in star fish
  4. Hemichordata General characters and classification up to classes with suitable examples

*Balanoglossus* - Structure and affinities

***Activity: Assignment /Seminar /Quiz/Project/Peer teaching on the above***

***Evaluation: Instructor supposed to prepare a detailed Rubrics for the evaluation of the above activity***

***Co-curricular activities (suggested)***

* Preparation of chart/model of phylogenic tree of life, 5-kingdom classification
* Visit to Zoology Museum or Coral Island as part of Zoological tour
* Charts on polymorphism
* Clay models of canal system in sponges
* Plaster-of-paris model of *Peripatus*
* Construction of a vermicompost in each college, manufacture of manure by students and donating to local farmers
* Chart on pearl forming layers using clay
* Visit to a pearl culture rearing industry/institute
* Live model of water vascular system
* Observation of Balanoglossus for its tubicolous habit

# REFERENCE BOOKS:

* L.H. Hyman „*The Invertebrates’ Vol I, II and V*. – M.C. Graw Hill Company Ltd.Kotpal, R.L. 1988 - 1992 Protozoa, Porifera, Coelenterata, Helminthes, Arthropoda, Mollusca, Echinodermata. Rastogi Publications, Meerut.
* E.L. Jordan and P.S. Verma „*Invertebrate Zoology’* S. Chand and Company.
* R.D. Barnes „*Invertebrate Zoology’* by: W.B. Saunders CO., 1986.
* Barrington. E.J.W., „*Invertebrate structure and Function’* by ELBS.
* P.S. Dhami and J.K. Dhami. Invertebrate Zoology. S. Chand and Co. New Delhi.
* Parker, T.J. and Haswell„*A text book of Zoology’* by, W.A., Mac Millan Co.London.
* Barnes, R.D. (1982). *Invertebrate Zoology*, V Edition”

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