CURRICULUM TRANSACTIONAL STRATEGY

Course: Animal diversity (Non chordates) **ZOO-CC-101**

Unit	Topic	Method	Activity	No. of classes needed
I	General characters and classification up to class level with distinctive and adaptive features of Protozoa	Lecture, PPT, Discussion	Library / Lab consultation/ assignment& presentation	02
	Porifera with the suitable examples of each category	do	do	02
	, Coelenterata, with the suitable examples of each category	do	do	02
	Platyhelminthes, with the suitable examples of each category	do	do	02
	Annelida, with the suitable examples of each category	do	do	02
	Arthropoda, with the suitable examples of each category	do	do	02
	Mollusca with the suitable examples of each category	do	do	02
	Echninodermata with the suitable examples of each category	do	do	02

Learning Outcomes

After going through this unit students should be able to:

- Classify the animals
- Understand biodiversity of nature,
- Distinguish animals of different classes.

Points for discussion

As 99% of the total animals comprises of invertebrates alone. So to understand this diverse fauna it is thus mendidatory to have basic knowledge about the systematics and taxonomy.so it was of utmost importance to introduce the invertebrates with the classification of invertebrates.

References:

- Barnes, R.D. (1982). Invertebrate Zoology, V Ed. Holt Saunders International Edition.
- Boolotian & Stiles. 1981. College Zoology (10th Ed.)
- Dorit, Walker & Barnes.1991.Zoology (Saunders)
- Marshall & Williams.1972. Text book of Zoology. Vol. I (Parker & Haswell,7th Ed.)
- Nigam. 1997. Biology of Non-Chordates (S. Chand)

Units	Topic	Method	Activity	No. of Classes Needed
II	Functional anatomy and mode of life of Amoeba, Entamoeba, plasmodium and trypanosome.	Lecture, PPT, Discussion	Library/Lab consultation/presentation & assignment	04
	Canal system and skeletal system of porifera	do	do	04
	Polymorphism in coelenterate	do	do	02
	Coral and coral reefs	do	do	02
	Ctenophora	do	do	01
	Life cycle and pathogenicity of *W bancrofti, T.solium, S.mansoni2and S.haematobium*	do	do	04

Learning Outcomes

After going through this unit you should be able to:

- Define metamerism and coelom
- How excretion occur in annelids
- Comparison of Onychophoran anatomy with Annelids and Arthropods.
- Different types of metamorphosis in insects.
- Discuss different system of Pila.
- Explain mechanism of torsion.
- Explain water vascular system in Asteroidea.
- Discuss different larval forms in Echinoderms and their evolutionary significance.

Points for the discussion:

Discussions were held about life cycle, pathogenicity and control of parasites which cause serious diseases in humans. Information related to different types of spicules which form the skeletal frame work of poriferans was given to the students.

References

- Barnes, R.D. (1982). Invertebrate Zoology, V Ed. Holt Saunders International Edition.
- Boolotian & Stiles. 1981. College Zoology (10th Ed.)
- Dorit, Walker & Barnes.1991.Zoology (Saunders)Harper,

Unit	Topic	Method	Activity	No. of classes needed
III	Evolution of Coelom,	Lecture, PPT, Discussion	Library / Lab consultation/ assignment& presentation	02
	Metamerism and Excretion.	do	do	02
	Onychophora:- General anatomy, distribution and Evolutionary significance.	do	do	02
	Photoreceptors and Metamorphosis in insects.	do	do	02
	General anatomy of Pila, Torsion and detorsion in Gastropods.	do	do	04
	Water vascular system in Asteroidea, Larval forms in Echinodermata.	do	do	03

Learning Outcomes

After going through this unit, you will be able to:

- Enlist the different criteria of a good tool,
- Describe the procedure to find out validity and reliability of a given tool,
- State the relationship between validity and reliability,
- Explain the importance of the four essential criteria in the teaching learning situation,
- Identify reliable and valid tools,

Points for discussion:

- How coelom and metamerism have evolved and correlation between and their evolition
- Why Onychophorans are connecting links
- Why and how metamorphosis occur.
- How image formation occurs in arthropods.
- Why torsion ands detorsion occur and how torsion differ from shell coiling.
- What is the significance of water vascular system.
- What is the evolutionary significance of echinoderms larvare.

References:

- Barnes, R.D. (1982). Invertebrate Zoology, V Ed. Holt Saunders International Edition.
- Boolotian & Stiles. 1981. College Zoology (10th Ed.)

- Dorit, Walker & Barnes.1991.Zoology (Saunders)
- Marshall & Williams.1972. Text book of Zoology. Vol. I (Parker & Haswell,7th Ed.)
- Nigam. 1997. Biology of Non-Chordates (S. Chand)
- Villee, Walker & Baranes. 1979. General Zoology 5th Ed. Saunders
- Hoar,2005.General and Comparative Physiology (5th Ed. Cambridge)
- Barnes, R.S.K., Calow,P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A new synthesis, III Ed. , Blackwell Science.
- Moore: An introduction to the invertebrates (2006, Cambridge)
- Kotpal R.L (2011). Invertebrates

Unit	Topic	Method	Activity	No. of classes needed
IV	Structure and Functions of the Invertebrates	Lecture/ Discussion & PPT/models	Library/field visit/Presentation & assignment	02
	Digestion: filter feeding in Invertebrates with special reference to Polychaetes.	Do	do	02
	Respiration: Structure and functions of Gills, Trachea and Book lungs	Do	do	03
	. Circulation: Types of Circulatory systems	Do	do	02
	blood composition in Non-Chordates	Do	do	02
	. Excretion: Structure and functions of Protonephridia and Metanephridia	Do	do	02
	. Reproduction: Asexual (Fission, Parthenogenesis and Regeneration in Non-Chordates.	Do	do	02

Learning outcomes

After going through this unit one will be able to:

- Understand the concept of biodiversity in animal kingdom.
- Discuss and deliberate upon the diversity in the biological functions in invertebrates.
- Debate upon the specialized capacity of filter feeding as mode of feeding with reference to their evolution.
- Understand the various forms of blood and their function in invertebrates.,
  .
- Discuss the diversified form of reproductive capabilities in invertebrates..

Points for discussion

To stress upon the biodiversity in invertebrates as these form 99% of the total animal forms in the world. To make students understand/feel their ecological, scientific and economic importance as in present times these creatures find their importance in every sphere of our life as in medicine, agriculture, horticulture, apiculture, lac culture, aqua culture etc

References

1. Barnes, R.D. (1982). Invertebrate Zoology, V Ed. Holt Saunders International Edition.

2. Boolotian & Stiles. 1981. College Zoology (10th Ed.)

3. Dorit, Walker & Barnes.1991.Zoology (Saunders)

4. Marshall & Williams.1972. Text book of Zoology. Vol. I (Parker & Haswell,7th Ed.)

5. Nigam. 1997. Biology of Non-Chordates (S. Chand)

6. Villee, Walker & Baranes. 1979. General Zoology 5th Ed. Saunders

7. Hoar,2005.General and Comparative Physiology (5th Ed. Cambridge)

8. Barnes, R.S.K., Calow,P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A new synthesis, III Ed. , Blackwell Science.

9. Moore: An introduction to the invertebrates (2006, Cambridge)

10. Kotpal R L, 2011 invertebrates