

B.Sc. ZOOLOGY SYLLABUS UNDER CBCS 2019

B.Sc. I Year

I - SEMESTER

Discipline Specific Course, Paper – I

Animal Diversity – Invertebrates

Periods: 60

Max. Marks: 80

UNIT – I :

1.1 Protozoa.

(15 Periods)

- 1.1.1 General characters and classification of Protozoa upto order levels with examples
- 1.1.2 Type study – *Elphidium*
- 1.1.3 Locomotion and Reproduction in Protozoa.
- 1.1.4 Epidemiology of Protozoan diseases - Amoebiasis; Giardiasis; Leishmaniasis and Malaria.

1.2 Porifera

- 1.2.1. General characters and classification of Porifera upto order levels with examples
- 1.2.2 Type study – *Sycon*
- 1.2.3 Canal system in sponges and Spicules.

UNIT – II

(15 Periods)

2.1. Cnidaria

- 2.1.1 General characters and classification of Cnidaria upto order levels with examples
- 2.1.2 Type study - *Obelia*
- 2.1.3 Polymorphism in Siphonophora
- 2.1.4 Corals and coral reef formation

2.2 Platyhelminthes

- 2.2.1 General characters
- 2.2.2 Classification of Platyhelminthes up to classes with examples
- 2.2.3 Type study- *Schistosoma*

2.3 Nematelminthes

- 2.3.1 General characters
- 2.3.2 Classification of Nematelminthes up to classes with examples
- 2.3.3 Type study - *Dracunculus*
- 2.3.4 Parasitic Adaptations in Helminthes

UNIT – III

(15 Periods)

3.1 Annelida

- 3.1.1 General characters
- 3.1.2 Classification of Annelida up to classes with examples
- 3.1.3 Type study - *Hirudinaria granulosa*.
- 3.1.4 Evolutionary significance of Coelome and Coelomoducts and metamerism

3.2 Arthropodia

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- 3.2.4 Crustacean larvae
- 3.2.5 Insect metamorphosis
- 3.2.6 *Peripatus* - Structure and affinities

UNIT – IV

(15 Periods)

4.1 Mollusca

- 4.1.1 General characters
- 4.1.2 Classification of Mollusca up to classes with examples
- 4.1.3 Type study - *Pila*
- 4.1.4 Pearl formation
- 4.1.5 Torsion and detorsion in gastropods

4.2 Echinodermata

- 4.2.1 General characters
- 4.2.2 Classification of Echinodermata up to classes with examples
- 4.2.3 Water vascular system in star fish
- 4.2.4 Echinoderm larvae and their significance

Suggested Readings

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

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B.Sc. I Year
ZOOLOGY PRACTICAL SYLLABUS FOR I SEMESTER
Discipline Specific Course, Paper – I
ANIMAL DIVERSITY - INVERTEBRATES

Periods: 45

Max. Marks: 25

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

- i. **Protozoa:** *Amoeba, Paramecium, Paramecium Binary fission and Conjugation, Vorticella, Entamoeba histolytica, Plasmodium vivax*
- ii. **Porifera:** *Sycon, Spongilla, Euspongia, Sycon - T.S & L.S, Spicules, Gemmule*
- iii. **Coelenterata:** *Obelia – Colony & Medusa, Aurelia, Physalia, Velella, Corallium, Gorgonia, Pennatula*
- iv. **Platyhelminthes:** *Planaria, Fasciola hepatica, Fasciola larval forms – Miracidium, Redia, Cercaria, Echinococcus granulosus, Taenia solium, Schistosoma haematobium*
- v. **Nemathelminthes:** *Ascaris (Male & Female), Dracunculus, Ancylostoma, Wuchereria*
- vi. **Annelida:** *Nereis, Aphrodite, Chaetopterus, Hirudinaria, Trochophore larva*
- vii. **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.*
- viii. **Mollusca:** *Chiton, Pila, Unio, Pteredo, Murex, Sepia, Loligo, Octopus, Nautilus, Glochidium larva*
- ix. **Echinodermata:** *Asterias, Ophiothrix, Echinus, Clypeaster, Cucumaria, Antedon, Bipinnaria larva*

2. Dissections:

Prawn: Appendages, Digestive system, Nervous system, Mounting of Statocyst
Insect Mouth Parts

3. Laboratory Record work shall be submitted at the time of practical examination

4. 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.

5. Computer aided techniques should be adopted – show virtual dissections

Suggested manuals:

1. Practical Zoology- Invertebrates S.S. Lal
2. Practical Zoology - Invertebrates P.S. Verma
3. Practical Zoology - Invertebrates K.P. Kurl