

BACHELORS WITH ZOOLOGY AS MAJOR

4th Semester

ZOL422J3: ZOOLOGY: FUNDAMENTALS OF PARASITOLOGY

Credits: Theory=4, Practical=2

Learning objective: To understand the nature of the parasites and parasitism. To acquaint the students about the knowledge of parasites of medical, veterinary & agricultural importance

Learning outcome: The learner becomes aware about the parasitic diseases & the consequences thereof; understand their mode of transmission, pathogenicity and control and management

(Theory: 4 Credits)

Unit 1: Introduction to Parasitology

- 1.1. Animal associations with special emphasis on parasitism; terms & definitions in parasitology
- 1.2. Origin, evolution and distribution of parasites in animal kingdom; parasitic adaptations
- 1.3. Host parasite relationships
- 1.4. Zoonosis: definitions & types

Unit II: Medical Parasitology

- 2.1. Protozoan parasites of man with emphasis on *Entamoeba* & *Plasmodium*
- 2.2. Trematode parasites of man with emphasis on *Schistosoma* & *Paragonimus*
- 2.3. Cestode parasites of man with emphasis on *Taenia* & *Diphyllobothrium*
- 2.4. Nematode parasites of man with emphasis on *Ascaris* & *Ancylostoma*

Unit III: Veterinary Parasitology

- 3.1. Protozoan parasites of poultry & cattle (*Babesia*)
- 3.2. Trematode parasites of fish (*Diplozoon*) & ruminants (*Fasciola*)
- 3.3. Cestode parasites of fish (*Adenoscolex*) & ruminants (*Moneizia*)
- 3.4. Nematode parasites of fish aves (*Heterakis*) & ruminants (*Haemonchus*)

Unit IV: Agricultural Nematology & Acanthocephalans

- 4.1. Introduction to phytonematodes with emphasis on their ecology & biology
- 4.2. Morphology, Life-cycle, pathogenicity and management of *Meloidogyne*
- 4.3. General account and distinguished features of acanthocephalans
- 4.4. Acanthocephalan parasites of fish (*Pomphorhynchus*)

Practical's (2 Credits)

List of Practical's:

1. Study of protozoan parasites of man & ruminants through slides available in museum
2. Preparation of permanent mounts of parasitic protozoans
3. Study of trematode parasites of man & ruminants available in museum
4. Study of cestode parasites of man & ruminants available in museum
5. Study of nematode parasites of man & ruminants available in museum
6. Methods of collection, fixation & preservation of parasites from different hosts viz., fish, fowl, sheep and cattle as per feasibility
7. Methods of temporary / permanent mount preparation of ecto and endo helminth parasites
8. Faecal, blood and urine examinations for diagnosis of parasitic diseases
9. Methods of extraction of nematodes from soil

Suggested Books / Reading Material

1. Animal Parasitology by J. D. Smyth
2. Foundations of Parasitology by Gerald D. Schmidt and Larry S. Roberts
3. Foundations of Parasitology by Larry S. Roberts, John Janovy & Steve Nadler
4. General parasitology by Thomas C. Cheng
5. Georgis' Parasitology for Veterinarians 10th Edition Evolve Elsevier.
6. Helminthes Arthropods and Protozoa of Domesticated Animals by E.J.L. Soulsby
7. Introduction to Parasitology by ASA C. Chandler & Clark P. Read
9. Parasitology (Protozoology & Helminthology) K.D. Chatterjee
10. Parasitology by Elmer R. Nobel and Glenn A. Noble
11. Plant Nematology by N.G. Ravichandra
12. Plant Nematology 2nd Edition by Roland N. Perry & Maurice Moens
13. Textbook of introductory plant nematology (revised 2nd edition). Raman K. Walia Harish K. Bajaj
14. Manual of Practical Microbiology and Parasitology by Pal Chakraborty
15. Parasitology Easy to Learn by Chandra T. Jaya, Jaypee Brothers Medical Publishers
16. Practical Exercises in Parasitology by D. W. Halton
17. Practical Guide to Diagnostic Parasitology by Lynne S. Garcia