

Semester: **II Zoology**

Parasitology

Course Content

Content

42Hrs

Unit – 1

Chapter 1. General Concepts

- ☐ Introduction, Parasites, parasitoids, host, zoonosis
- ☐ Origin and evolution of parasites
- ☐ Basic concept of Parasitism, symbiosis, phoresis, commensalisms and mutualism
- ☐ Host-parasite interactions and adaptations
- ☐ Life cycle of human parasites
- ☐ Occurance, mode of infection and prophylaxis

Chapter 2. Parasitic Platyhelminthes

- ☐ Study of morphology, life cycle, pathogenicity, prophylaxis and control measures of
- ☐ *Fasciolopsisbuski*
- ☐ *Schistosoma haematobium*
- ☐ *Taenia solium*
- ☐ *Hymenolepis nana*

Chapter 3. Parasitic Protists

- ☐ Study of morphology, life cycle, pathogenicity, prophylaxis and control measures of
- ☐ *Entamoeba histolytica*
- ☐ *Giardia intestinalis*

14

At the end of the course the students will be able to:

9. Know the stages of the life cycles of the parasites and infective stages.
10. Develop ecological model to know population dynamics of parasite, establishment of parasite population in host body, adaptive radiations and methods adopted by parasite to combat with the host immune system.
11. Develop skills and realize significance of diagnosis of parasitic infection and treatment.
12. Understand about diseases caused by Protozoa, Helminthes, Nematodes and Arthropods at molecular level.
13. Develop their future career in medical sciences and related administrative services.

38

☒ Trypanosomagambiense

☒ Plasmodium vivax

Unit – 2

14

Chapter 4. Parasitic Nematodes

☒ Study of morphology, life cycle, pathogenicity, prophylaxis and control measures of

☒ Ascarislumbricoides

☒ Ancylostomaduodenale

☒ Wuchereriabancrofti

☒ Trichinellaspiralis

☒ Nematode plant interaction ; Gall formation

Chapter 5. Parasitic Arthropods

☒ Biology, importance and control of

☒ Ticks (Soft tick Ornithodoros, Hard tick Ixodes)

☒ Mites(Sarcoptes)

☒ Lice (Pediculus)

☒ Flea (Xenopsylla)

☒ Bug (Cimex)

☒ Parasitoid (Beetles)

Chapter 6. Parasitic Vertebrates

☒ Cookicutter Shark

☒ Hood Mocking bird and

Vampire bat and their parasitic behavior and effect on host

Unit – 3

14

Chapter 7. Molecular diagnosis & clinical parasitology

☒ General concept of molecular diagnosis for parasitic infection

☒ Advantages and disadvantages of molecular diagnosis

☒ Fundamental techniques used in molecular diagnosis of endoparasites

☒ Immunoassay or serological techniques for laboratory diagnosis of endoparasites on the basis of marker molecules like *G. intestinalis*, *B. coli*, *E. histolytica*, *L. donovani*, Malarial parasite using

☒ ELISA, RIA

☒ Counter Current Immunelectrophoresis (CCI)

☒ Complement Fixation Test (CFT) PCR, DNA, RNA probe

Suggested Readings:

19. Arora, D. R and Arora, B. (2001) Medical Parasitology. II Edition. CBS Publications and Distributors.

20. E.R. Noble and G.A. Noble (1982) Parasitology: The biology of animal parasites. V Edition, Lea &Febiger.

21. Ahmed, N., Dawson, M., Smith, C. and Wood, Ed. (2007) Biology of Disease. Taylor and Francis Group.

22. Parija, S. C. Textbook of medical parasitology, protozoology & helminthology (Text and colour Atlas), II Edition, All India Publishers & Distributors, Medical Books Publishers, Chennai, Delhi.

23. Meyer, Olsen & Schmidt's Essentials of Parasitology, Murray, D. Dailey, W.C. Brown Publishers.

24. K. D. Chatterjee (2009). Parasitology: Protozoology and Helminthology. XIII Edition, CBS Publishers & Distributors (P) Ltd.

25. Gunn, A. and Pitt, S.J. (2012). Parasitology: an Integrated Approach. Wiley Blackwell.
26. Noble, E. R. and G.A.Noble (1982) Parasitology: The biology of animal parasites. V th Edition, Lea &Febiger.
27. Paniker, C.K.J., Ghosh, S. [Ed} (2013). Paniker's Text Book of Medical Parasitology. Jaypee, New Delhi.
28. Parija,S.C.Textbookofmedicalparasitology,protozoology&helminthology(Textand color Atlas),II Edition, All India Publishers & Distributers, Medical Books Publishers, Chennai, Delhi.
29. Roberts, L.S and Janovy, J. (2009). Smith & Robert's Foundation of Parasitology. 8th. Edn. McGraw Hill.
- 39
30. Bogitsh, B. J. and Cheng, T. C. (2000). Human Parasitology. 2nd Ed. Academic Press, New York.
31. Chandler, A. C. and Read. C. P. (1961). Introduction to Parasitology, 10th ed. John Wiley andSons Inc.
32. Cheng, T. C. (1986). General Parasitology. 2nd ed. Academic Press, Inc. Orlando.U.S.A.
33. Schmidt, G. D. and Roberts, L. S. (2001). Foundation of Parasitology. 3rd ed. McGraw Hill Publishers.
34. Schmidt, G. D. (1989). Essentials of Parasitology. Wm. C. Brown Publishers (Indian print1990, Universal Book Stall).
35. John Hyde (1996) Molecular Parasitology Open University Press.
36. J Joseph Marr and Miklos Muller (1995) Biochemistry and Molecular Biology of Parasites 2 ndEdn Academic Press.