

Chattogram Veterinary and Animal Sciences University

Department of Pathology and Parasitology

Final Examination of Master of Science in Parasitology

Semester: July- December'2022

Course Title: Entomology

Course Code: EPR- 602

Time: 2 hours

Total marks: 40

***Answer any FIVE (5) questions from the following. Figures in the right margin indicate the full marks.**

1. You are working as a 'Lieutenant' at "Remount, Veterinary and Farms Corps (RVFC)" of the Bangladesh Army. Your current posting is in a military farm of Chittagong Cantonment. After taking over the charge of the dairy farm unit, you identified several problems that contribute the reduction of production. One of the major problems of the farm is the 'tick infestation'. You had a chat with your boss (who is a 'Major') about the problem. How will you address/facilitate the following queries asked by your boss?
a. How does tick infestation reduce the productivity of the animals? [1]
b. What would be your strategies to control tick infestation in farm level and pasture lands? [4]
c. What are the chemicals available and how can you apply them to control tick infestation? [3]
2. You are working as a MS research fellow at 'Teaching and Training Pet Hospital and Research Centre', Purbachol, Dhaka. You attended a patient (e.g. cat), went for physical examination and observed skin lesions with lots of fleas and lice on the body coat. No other abnormalities were recorded except alopecia, pale mucous membrane and poor body condition. One of the duty doctors came and asked the following questions before commencement of the treatment.
a. What is/are name of the condition(s) patient suffering from? [2]
b. What are the name of ecto-parasites involved with the lesions observed? [2]
c. Do these ecto-parasites act as the vectors of other diseases? [2]
d. What are the features of the lice that can cause anemia in heavy infestation? [2]
3. You are working as a "Surveillance Officer" at "National Malaria Control Program (NMCP)" run by BRAC (Bangladesh Rural Advancement Committee). It is one of your responsibility to collect the mosquitoes' specimen from highly endemic areas (e.g. Chittagong Hill tracks and Cox's Bazar) and identify those in a laboratory. How will you response to the following questions to expand your comport zone during working in the project.
a. How will you identify and differentiate the mosquito vectors that cause malaria with other genera available in Bangladesh? [4]
b. What is the rationale of using oil-based insecticide to kill larval stages of mosquitoes and what strategies can be adopted to control malaria in the mentioned regions? [4]
4. a. Write down the distribution of sandflies in Bangladesh. Mention the possible breeding sites of sandflies. 4
b. 'Brachyceran' are more efficient mechanical vector than 'Nematoceran'-Justify 4
5. Mention the vector importance of the followings: 1.6X5=8
a. *Aedes* sp b. *Phlebotomus papatasi* c. *Musca domestica* d. *Culicoides* spp
e. *Simulium* spp
6. How do you morphologically identify the following species? 1.6X5=8
a. *Phlebotomus* spp b. *Stomoxys calcitrans* c. *Tabanus* spp d. Tsetsefly e. Blackfly

Chattogram Veterinary and Animal Sciences University
Department of Pathology and Parasitology
Final Examination of Master of Science in Parasitology
Semester: July-December 2022
Course Title: Zoonotic Parasite (Theory)
Course Code: ZPR-602

Time: 2 hours

Total marks: 40

Answer any Four (4) question: Figures in the right margin indicate the full marks.

1. (a) Mention the public health significance of leishmaniosis and trypanosomiosis. 5
(b) Illustrate the morphology, life cycle, pathogenesis and pathology of *Echinococcus granulosus*. 5
2. (a) Enlist the parasites which cause infection through penetration of skin. How does *Diphyllobothrium latum* cause pernicious anaemia? 6
(b) Write down the scientific name of parasites the following conditions: 2x2=4
i) Cercarial dermatitis ii) Aneurysm
3. (a) How you differentiates the genus of Fasciolidae family? 5
Mention the morphology and life patten of *Dirofilaria immitis* in dog.
(b) Briefly describe the epidemiology, pathogenesis and life cycle of *Ascaris suum* in swine. 5
4. (a) Write down the life cycle, pathogenesis and pathology of *Trichinella spiralis*. 5
(b) Write down the differences between *Dirofilaria immitis* and *Angiostrongylus vasorum*. 5
5. Write down the short notes on (any two) 5x2=10
a) Sura in mare
b) Bovine trypanosomiosis
c) Cercarial dermatitis

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Department of Pathology and Parasitology

Final Examination of Master of Science in Parasitology

Course title: Molecular Parasitology (Theory)

Course code: MPR-602

Semester: July-December, 2021

Time: 2 hours

Marks: 40

Answer any **Four** questions from the following:

4*10= 40

(all questions have equal marks)

1. a. What is central dogma? Discuss gene expression and regulation in parasites with example.
b. Enlist post transcriptional modifications. Briefly describe the mRNA splicing mechanisms.
2. a. what is primer? Describe the important criteria in designing PCR primers.
b. Briefly discuss the principles and different steps of polymerase chain reaction.
3. a. Mention the different methods of gene sequencing. Illustrate features of apicomplexan parasite genomes.
b. What is mitochondrial genome diversity in parasites. state the important factors responsible for the emergence of new parasites in the world.
4. a. What is DNA barcoding? Write down the principles and limitations of using barcoding.
b. What is phylogenetic analysis? What are the different methods for phylogenetic analysis and how to read the phylogenetic analysis.
5. Write short notes on (any two)
 - a. RFLP
 - b. ELISA
 - c. SDS-PAGE

Chattogram Veterinary and Animal Sciences University

Department of Pathology and Parasitology

MS in Parasitology

July - December Semester Final Examination-2022

Course title - **Protozoology**

Course code – PRT - 602

Full Marks - 40, Time - 2 hours

Answer any (5) questions in the following:

1. (a) Define and classify zoonosis. 4.0
(b) How can you diagnose bovine anaplasmosis and ehrlichiosis? 4.0
2. (a) Illustrate the developmental stages of Trypanosomes. 4.0
(b) “It is difficult to produce vaccine against trypanosomes” – Explain. 4.0
3. (a) How can you confirmed babesiosis and histomoniasis in Parasitology Lab.? 4.0
(b) Name the species of Theileria with disease that occur in cattle. 4.0
Write down the life cycle of *theileria parva* of bull in sketch form.
4. (a) Draw and label of a typical protozoa which may causes early abortion in cow. 4.0
(b) What do you mean by dum dum fever and shuttle programme? 4.0
5. a) Enumerate the haemoprotozoa of ruminants. How can you diagnose bovine anaplasmosis? 4.0
b) Briefly describe the epidemiological factors and the pathogenesis of babesiosis in cattle. 4.0
6. a) Mention source and methods of transmission of zoonotic diseases with example. How will you control the zoonotic protozoal diseases. 4.0
b) Write short notes on *Toxoplasma gondii* infection in nanny goat? 4.0

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Department of Pathology and Parasitology
Final Examination of Master of Science in Parasitology
Course title: Parasitic Ecology and Epidemiology (Theory)
Course code: PEE-602
Semester: July-December, 2021

Time: 2 hours

Marks: 40

Answer any **Four** questions from the following:

4*10=40

(all questions have equal marks)

1. a. What do you mean by epidemic curve, transmission threshold, critical population size, basic reproductive number and herd immunity.
b. Briefly describe the importance of ecological epidemiology and the transmission dynamics of parasites within populations.
2. a. What is bionomics? Briefly describe the factors influencing vector bionomics.
b. Write down the mechanism of water balance in unfed tick population.
3. a. Define population dynamics. What does determine the total number of parasites in a host population?
b. Make a possible study design to investigate prevalence and available vectors of Kala-azar in northern part of Bangladesh.
4. a. Mention the bionomics of *Fasciola* and *Eimeria spp.*
b. Write down the guidelines for controlling drug resistance present in a herd.
5. Write short notes on (any two)
 - a. Emerging infectious diseases
 - b. Immunization programs
 - c. Outbreak investigation