

**Chattogram Veterinary and Animal Sciences University**

Department of Microbiology and Veterinary Public Health

MS in Microbiology; January-June Semester, 2022

Subject: Industrial Microbiology, Course code: IMS-601

Total Marks: 40; Time: 2 hours

(Figures in the right margin indicate full marks. Answer any four questions)

- 1 a) Define industrial microbiology. Write down the scope and prospects of industrial microbiology. 3
- b) Tabulate different metabolites, vitamins, and antibiotics producing specific organisms with their commercial applications. 5
- c) What are the minor elements and co-factors that you consider during the formulation of the fermentation media? 2
- 2 a) Write down the raw materials used for the production of butanol and ethanol. Mention the specific application of these chemicals in the context of Bangladesh. 4
- b) Suppose you are appointed as a microbiologist at the BLRI and you are working with HPAIV. Which level of BSC will you choose and briefly describe the infrastructure as well as laboratory facilities of these BSC? 4
- c) Classify antifoaming agents with examples. 2
- 3 a) What is an inoculum? Briefly describe the parameters that should be maintained for bioreactor design and ensure optimum conditions for microbes. 4
- b) Briefly describe the nutritive value and therapeutic importance of fermented foods. 3
- c) Write down the difference between microfiltration, ultrafiltration, and reverse osmosis. 3
- 4 a) Define biosafety. List the microbial enzymes with their specific roles in the leather industry. 3
- b) Briefly describe, Why is screening an interdisciplinary task? 3
- c) What is wort? Explain the beer production and fermentation process. 4
- 5 a) Define HEPA filter. What are the criteria you will follow for patenting your newly discovered product or technology? 4
- b) Write down the following short notes: 3+3
  - I. Manufacturing of antibiotics
  - II. Probiotics

**Chattogram Veterinary and Animal Sciences University**

**Department of Pathology and Parasitology**

**Final Examination of Master of Science in Parasitology**

**Semester : January - June - 2021**

**Subject: General Parasitology (Theory)**

**Course Title: GPR - 601 (T)**

**Full Marks: 40, Time: 2 Hours**

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

1. a) Illustrate the sources of infection, mode of transmission and injurious effects of parasites on host. 6  
b) Write down the zoological nomenclature of parasites. 2
2. a) Define helminthes. Illustrate various developmental stages with figures of digenetic trematode. 4  
b) Explain the investigation procedure for the identification of gastrointestinal parasitic infection nanny goat. 4
3. a) Mention some recent inventions related to Veterinary Parasitology. 3  
b) Compare morphology of a cestode, trematode and nematode. 2  
c) Discuss general control and prevention of parasitic diseases of milking cow. 3
4. a) What kinds of measures should be taken to prevent anthelmintics resistance in animals? 3  
b) Why it is difficult to produce vaccine production against parasites? 2  
c) What is symbiosis? Differentiate between parasitism and commensalism. 3
5. a) Define drug susceptibility and drug resistance. Mention the ideal properties of an anthelmintics. 4  
b) Explain the following terms (any four) 1x4=4  
i) Aberrant and pseudoparasites ii) Reservoir and paratenic host  
ii) Facultative and obligatory parasites iv) Histo zoic and coelozoic parasites  
v) Vector and intermediate host
6. Write short notes (any two) 4x2=8  
a) Hypobiosis and spring rise b) Selfcure phenomenon and Spontaneous cure  
c) Integrated and Pest Management (IPM)

**Chattogram Veterinary and Animal Sciences University**  
**Department of Pathology and Parasitology**  
**Final Examination of Masters of Science in Parasitology**  
**Course Title: Immunoparasitology**  
**Course Code: IPR-601**  
**Semester: January- June' 2022**

**Time: 2 hours**

**Total marks: 40**

Answer any **FOUR (4)** questions from the following. Figures in the right margin indicate the full marks.

1. a). What is immunoparasitology? Classify different types of immunity. 5  
b). Define immunoglobulin? Distinguish IgG from IgE. 5
2. a). What is MHC molecule? Illustrate the processing and presentation of an endogenous antigen by an antigen presenting cell. 5  
b). Define CD molecule? Classify major cells of immune system based on CD molecules? 5
3. a). Draw and label a cross section of a lymph node or spleen showing the distribution of immune cells on it. 5  
b). Define hypersensitivity? Describe the 'delayed type of hypersensitivity' with an appropriate example. 5
4. a). Briefly describe the role of different immune cells in the protection against malarial parasitic infection in man. 5  
b). What is immune evasion? Illustrate the mentioned mechanism in case of *Plasmodium* and *Trypanosoma* spp infections. 5
5. a). Differentiate 'Parasitic immunity' from 'Bacterial immunity' 5  
b). Explain the adaptive immune responses in '*kala-azar*'. 5
6. a). Write down the humoral immune responses to 'Hookworm' infection. 5  
b). Describe the difficulties of vaccine production against helminths? 5

**Chittagong Veterinary and Animal Sciences University**  
**Department of Pathology and Parasitology**  
**MS in Parasitology (Final Examination)**  
**Course title: Vector Biology and Tropical Diseases (Theory)**  
**Course code: VDT-601**  
**Semester: January-June, 2022**

Time : 2 hours

Marks : 40

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

4x10=40

(All questions have equal marks)

1. a. List different neglected tropical diseases (NTD) reported in Bangladesh. How will you control them?  
b. What is a vector? Discuss the influence of climate change in the epidemiology of vector and vector-borne diseases.
2. a. Discuss the factors associated with prevalence of trypanosomiasis?  
b. Briefly describe the various control measures of bovine trypanosomiasis.
3. a. How will you correlate One Health concept with Vector borne diseases? Give at least two examples.  
b. List the zoonotic diseases for which arthropods act as vectors in Bangladesh perspective.
4. a. Discuss vector competency, seasonal activity and population dynamics of ticks.  
b. How does an unfed tick maintain water balance in its body?
5. a. Describe the clinical signs, diagnosis, treatment and control of Leishmaniasis in dog.  
b. Describe the vector importance of:  
    i) Sand flies                      ii) Biting midges  
    iii) Horse flies                iv) *Aedes* sp.
6. Write short notes on (any two):-
  - a. Vector potential of Tabanid flies
  - b. Epidemiology of parasitic zoonoses
  - c. Malaria transmission in Southeast Asia

**Chattogram Veterinary and Animal Sciences University**  
**Department of Pathology and Parasitology**  
**Final Examination of Masters of Science in Parasitology**  
**Course Title: Helminthology**  
**Course Code: HPR-601**  
**Semester: January- June' 2022**

**Time: 2 hours**

**Total marks: 40**

Answer any **FOUR (4)** questions from the following. Figures in the right margin indicate the full marks.

1. a). List the parasites that cause PGE? Describe the pathogenies of 'Ostertagiosis' in sheep. 5  
b). Differentiate the life cycle of *Ostertagia*, *Haemonchus* and *Trichostrongylus* spp in ruminants. 5
2. a). Sketch the life cycle of *Ancylostoma caninum*. 5  
b). Illustrate the pathogenesis of hookworm infestation in a dog. 5
3. a). Write down the morphological features of *Fasciola* sp and *Paramphistomum* sp. 5  
b). Explain the pathogenesis of 'Paramphistomiasis' in cattle. 5
4. a). List the helminths of cattle and horse with their location in final hosts. 5  
b). Write down the risk factor and pathogenic significance of 'Hump sore' in cattle 5
5. a). Tabulate the metacestodes of animals with appropriate examples. 5  
b). Briefly mentioned the diagnosis, control and prevention of 'Gid disease' in goat. 5
6. a). List the parasites of dog. Sketch the life cycle '*Diphyllbothrium latum*'. 5  
b). Write down the pathogenic significance of 'Canine Heartworm disease'. 5

Chattogram Veterinary and Animal Sciences University

Faculty of Veterinary Medicine

Department of pathology and parasitology

MS in Parasitology (January-June semester) Final Examination'2022

Course title: Avian parasitology

Course code: APR-601

Full marks: 40

Time: 2 hours

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

1. State the remarkable morphological features of following parasites 5\*2=10
  - a. *Syngamus trachea*
  - b. *Echinostoma revolutum*
  - b. *Heterakis gallinarum*
  - d. *Davainea proglottina*
  - c. *Lyperosomum longicauda*
2. (a) Briefly describe anti parasite behaviour of birds. 5  
(b) Mention the factors responsible for the occurrence and distribution of parasite in a geographical area. 5
3. Write short note on (Any two) 5\*2=10
  - a. Lizard poisoning disease of poultry
  - b. Red mite
  - c. Gape worm
4. (a) Which trematode species is considered as the most pathogenic trematode of chicken and why? 4  
(b) Sketch the life cycle and mention the diagnosis of this parasitic infection 6
5. (a) Enlist important nematodes of poultry with their host and predilection site. 4  
(b) Describe briefly the economic importance, epidemiological features and control measures against *Ascaridia gaili* infection in chicken. 6