

**Chittagong Veterinary and Animal Sciences University**  
**Faculty of Fisheries**  
**Department of Aquaculture**  
**MS in Aquaculture, Jan-June semester, Final Exam/2019**  
**Course No&Title.: AFA-501 (T);Advanced Freshwater Aquaculture (Theory)**  
**Full Marks: 40; Time: 2hours**

Answer **any four (04)** from the following. Figure in the right margins indicates full marks. Splits answers is not acceptable.

1. a. Write down the importance and objectives of aquaculture in Bangladesh. 2
- b. Explain in details the current status, future potentials and trend of aquaculture development in Bangladesh. 5
- c. List down the positive & negative impacts of introduced species in Bangladesh. 3
2. a. Summarized the technological changes and production trend of cultured fish of carps. 4
- b. Explain the present status of aquaculture in Bangladesh. 4
- c. Write down the major constrains of snakehead fish farming? 2
3. a. List out the major constrains of prawn farming in Bangladesh. 5
- b. Write down the culture techniques of prawn farming in Bangladesh? 5
4. a. Define the non-traditional aquatic species with examples. 2
- b. Write down in details the molluscs and abalone culture technique in Bangladesh. 6
- c. List out the advantages and disadvantages of Cage culture. 2
5. a. Write down the definition of the threatened species. Give 10 examples of the threatened fish species. 5
- b. Explain in details the culture practiced to conserve the threatened fish species. 5



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**Course No&Title.: AQN-501 (T);Aquaculture Nutrition (Theory)**  
**Full Marks: 40; Time: 2hours**

Answer any four (04) from the following. Figure in the right margins indicates full marks. Splits answers is not acceptable.

1. a. Define carbohydrate. What are the factors effects on carbohydrate digestion? 4
- b. Summarize the steps of carbohydrate digestion. 4
- c. Write down the advantages and disadvantages of using carbohydrate in fish feed? 2
2. a. Write down the importance of nutrition in aquaculture. 2
- b. Explain in details the process of lipid digestion in fish. 6
- c. Define Specific Dynamic Action (SDA) and its significance. 2
3. a. Write down the biochemical functions of selenium (Se), fluorine (Fl) & zinc (Zn). 6
- b. Explain in details the Metabolism of Minerals. 4
4. a. What is the importance of studying dietary nutrient requirement for fish? 4
- b. Discuss briefly the dietary nutrients specification for rearing carp fish species. 6
5. a. Write down the importance of brood stock and larval nutrition in aquaculture? 6
- b. Explain in details the nutrition requirements for brood stock and larvae rearing in aquaculture. 4



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MS in Aquaculture, January-June Semester, 2019  
Course Code: **APH-501 (T)**; Course Title: **Aquatic Pharmacology (Theory)**  
Full Marks 40; Time 2 hour

Answer any 4 from the followings. Figure in the right margin indicate full mark of the questions.

1. a) What types of aquadrugs are used in aquaculture in Bangladesh? 3  
b) Identify the problems associated with aquadrugs and give some recommendations to overcome these problems. 7
2. a) Discuss the mechanism of action of drugs. 5  
b) Write in brief about the factors affecting the dose and action of drugs. 5
3. a) Do you think selection of drug administration route is important? Why? 4  
b) Write in brief about some FDA approved aquaculture drugs. 6
4. a) Illustrate the mechanism of drug resistance aquatic organisms. 5  
b) Discuss the factors influencing drug resistance in aquaculture. 5
5. a) Give a list of breeding inducing drugs in aquaculture. 3  
b) Write in brief about some breeding inducing drugs in different species in aquaculture. 7
6. a) Differentiate between agonist and antagonist. 2  
b) Write down the principles of drug activities. 3  
c) Discuss the drug metabolism process. 5



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MS in Aquaculture, (January-June), Final Examination 2019  
Course Code: **APA-502 (T)**; Course Title: **Aquatic Parasitology (Theory)**  
Full Marks 40; Time 2 hour

Answer any 4 from the followings. Figure in the right margin indicate full mark of the question.

1. a) Parasites are important part of ecology- justify the statement. 5  
b) Give a comparison of different group of parasites. 5
2. a) Explain the followings- Prevalence, Incidence, Intensity. Density, Suprapopulation. 5  
b) Discuss the host-parasite relationship in different aquatic environment. 5
3. a) Write in brief about Ich disease in fish. 3  
b) Discuss any two disease caused by fluke. 7
4. Describe any two diseases caused by parasites of digenea and acanthocephala group with their life cycle. 10
5. a) Explain protozoan infection in shrimp. 6  
b) Write in brief about any parasitic disease in lobster. 4
6. a) Give a list of fish borne zoonotic disease. 2  
b) Describe any two of them. 8



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**MS in Aquaculture, Jan-June semester, Final Exam/2019**

**Course No&Title.: APE-501 (T);Aquafarm Planning and Engineering (Theory)**

**Full Marks: 40; Time: 2hours**

Answer **any four (04)** from the following. Figure in the right margins indicates full marks. Splits answers is not acceptable.

1. a. Summarize the management systems of waste in aquaculture systems. 4  
b. What is the importance of waste and hygiene management in aquaculture? 4  
c. What are the different sources of waste from aquaculture? 2
2. a. What are the guidelines need to follow for transportation of fish? 5  
b. Explain in details the different methods used for transporting of fish. 5
3. a. Discuss in details the problems encountered during selection of soils for design of ponds, canals and dams in aquaculture. 4  
b. Write down the significance of drying during preparation of ponds? 2  
c. For designing aquaculture systems what are the hydraulic aspects need to be considered? 4
4. a. List out the different types of ponds need to prepare for fish culture. 5  
b. Briefly discuss the physical factors need to be consider for constructing a pond. 5
5. a. What are the factors need to follow for site selection for aquaculture? 6  
b. What are the techniques need to be used to estimate the benefits of the investment in financial terms when you operate an aquarium? 4



**Chattogram Veterinary and Animal Sciences University**  
**Faculty of Fisheries**  
**Department of Aquaculture**  
MS in Aquaculture, January-June Semester, 2019  
Course Code: AHM-501 (T); Course Title: Aquatic Animal Health Management (Theory)  
Full Marks 40; Time 2 hour

Answer any 4 from the followings. Figure in the right margin indicate full mark of the questions.

1. a) What is the present scenario of aquadrug usage in aquaculture in Bangladesh? 3  
b) Write in brief about the effect of aquad rugs on human health and aquatic environment. 7
2. a) Give a list of probiotics used in fish with their source and method of administration. 4  
b) Do you think probiotics are beneficial than antibiotics? Why? 6
3. a) What is epidemiology? 3  
b) Discuss about some non-infectious diseases in shrimp. 7
4. a) Enlist some important diseases in fish. 2  
c) Explain any two infectious diseases in fish. 8
5. a) What is disease surveillance? 2  
b) What are the basic components of disease surveillance? 2  
c) Write in brief about the disease surveillance method. 6
6. a) Discuss about biosecurity strategies. 5  
b) Explain the pros and cons of vaccination and chemotherapy and give your opinion about which one can be recommended to follow? 5