

Chittagong Veterinary and Animal Sciences University

Faculty of Fisheries

Department of Aquaculture

MS in Aquaculture, (July-December), Final Examination 2018

Course Code: **AQP-502 (T)**; Course Title: **Aquatic Pathology (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) Explain systemic pathology. 3
b) Describe respiratory pathology in fish. 7
2. Give a list of bacterial diseases of shrimp and prawn. Describe any two of them with etiology, gross signs, pathology, epizootiology, diagnosis and control measures. 10
3. a) Write in brief about the outbreaks of mycotic diseases in fish in Bangladesh. 5
b) Discuss one devastating fungal disease of fish in our country. 5
4. a) What is SVC? 2
b) Describe SVC with its impact on aquaculture in Bangladesh. 8
5. a) Viral diseases are curse to aquaculture-explain the statement. 4
b) Describe two viral diseases of shrimp. 6
6. a) Explain the mechanism of cell death. 4
b) Discuss some non-infectious diseases in fish. 6

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MS in Aquaculture, (July-December), Final Examination 2018

Course Code: **ACA-502 (T)**; Course Title: **Advanced Coastal Aquaculture (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. Give a general overview of shrimp farming procedure in coastal region of Bangladesh. 10
2. a) Hatchery is indispensable in modern aquaculture-explain. 5
b) Enumerate the basic components of a fish hatchery. 5
3. a) Mention some good handling practices in aquaculture. 4
b) Describe different methods of live fish transportation. 6
4. a) Discuss several culture techniques of oyster in coastal region. 7
b) How do you control predators in mollusk culture? 3
5. Discuss the adverse impacts of coastal aquaculture on environment. How will you mitigate them? 10
6. a) Differentiate between the management practices of fish farms and hatcheries. 5
b) What do you know about larval feed? 5

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MS in Aquaculture, Jul-Dec semester, Final Exam/2018

Course No&Title.: AFT-502 (T);Aquaculture Feed Technology (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 criteria for selecting feed antioxidants. Give details how the antioxidant works.	4
	b.	Summarize the effects of antioxidants when used in feed formulation.	4
	c.	Write the advantages of antioxidant enrichment in feed.	2
2.	a.	Define the digestibility. Write down the factors affecting digestibility.	4
	b.	Distinguish between apparent and true nutrient digestibility	2
	c.	Write down the factors affecting energy requirement of fish and shrimp.	4
3.	a.	Write down the four basic feeding strategies are commonly available for the mass propagation of marine shrimp from first feeding, through metamorphosis to the postlarvae stage.	4
	b.	Write down the 10 different factors of feeding strategy.	2
	c.	Define binder and write down the benefits of using binder in feed formulation.	4
4.	a.	Write down the conventional and unconventional feedstuffs available for feed formulation	4
	b.	Differentiate between conventional and unconventional feedstuffs	2
	c.	Define the anti-nutritional factors in feed formulation and write down the major 4 groups of antinutrient of plant origin	4
5.	a.	Explain the advantages and disadvantages of using fiber in feed formulation.	6
	b.	Write down the sources of fiber in ingredients used for making fish feed.	4

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MS in Aquaculture, Jul-Dec semester, Final Exam/2018

Course No&Title.: SAC-502 (T);Sustainable Aquaculture and Climate Change (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 the social impacts. Write down the importance of sustainable aquaculture and climate change to livelihoods.	5
	b.	What are the social benefits arising from climate change policies that are designed and implemented with a focus on improving people's lives.	5
2.	a.	Write down the specific impacts of climate change on fish and food security.	5
	b.	Explain in details the impacts of climate change on aquaculture	5
3.	a.	Define governance.	2
	b.	Write down in details the types of governance	4
	c.	Summarized the basic principles of governance	4
4.	a.	Define the sustainable aquaculture? Write down the importance of sustainable aquaculture	5
	b.	What are the different resources used efficiently for sustainable aquaculture	5
5.	a.	Write down the impacts of climate change on fisheries and aquaculture	6
	b.	What are the causes contribute to the greenhouse effect.	4

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MS in Aquaculture, (July-December), Final Examination 2018
Course Code: **AQI-502 (T)**; Course Title: **Aquatic Immunology (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) Illustrate organs of immune system in teleost fish. 7
b) Give a list of cells that influence immune system of fish. 3
2. a) Describe the development process of fish vaccines. 5
b) What are the different strategies of vaccine administration? 5
3. a) Identify the main differences between defense mechanism of fish and shrimp. 2
b) Discuss defense mechanism in shrimp. 8
4. a) Write down the functions of immunomodulators. 3
b) Describe some immunosuppressive components in aquatic environment. 7
5. a) Categorize immunostimulants used in aquaculture. 3
b) What are attributes of immunostimulants? 2
c) Discuss the mode of action of immunostimulants. 5
6. a) Illustrate the process of monoclonal antibody production. 4
b) Explain two rapid immunodiagnosis process. 6

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MS in Aquaculture, Jul-Dec semester, Final Exam/2018
Course No&Title.: IAF-502 (T);Integrated Aquafarming (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 advantages and disadvantages of integrated aquaculture-horticulture.	4
	b.	Define Integrated multi-trophic aquaculture (IMTA). Write down the components for IMTA.	2
	c.	Write the advantages and disadvantages of IMTA	4
2.	a.	Write down the importance of integrated aqua farming.	4
	b.	Write down the factors need to be consider for Integrated Aquafarming.	2
	c.	What are the future challenges for Integrated Agri-Aquaculture Systems.	4
3.	a.	What are the major considerations to adopt integrated aqua-farming in Bangladesh.	4
	b.	Write down the socio-economic consideration for integrated farming systems	2
	c.	Summarize the importance of Rice-Fish Culture.	4
4.	a.	Write down the advantages and disadvantages of Rice-Fish Culture.	4
	b.	What should be the criteria of fish species for rice-fish culture.	2
	c.	Explain in details the management of rice-fish culture system.	4
5.	a.	Write down the major types of integrated livestock-fish farming system.	6
	b.	What are the constraints of integrated livestock-fish farming system in Bangladesh	4