

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

Department of Fisheries Resource Management

Master of Science in Fisheries Resource Management, July-December Semester Final Examination
2017

Course No: **MCR-502 (Compulsory)**, Course Title: **Mangroves Conservation and Restoration**
Total Marks: 40, Time: 2 hours

Answer any FOUR questions. Illustrate your answer wherever necessary. Figure in the right margin indicates full marks.

1. a) Why mangroves are called renewable resources? **4.0**
b) Describe the major ecological processes involved in *Sundarbans* Mangrove forest. **6.0**
2. a) What do you know about “aging of mangroves”? - Explain with examples. **4.0**
b) How different population parameters can be used in relation to mangrove aging? **6.0**
3. a) Elaborate your comprehensibility regarding negative aquaculture practice? **4.0**
b) Do you think aquaculture development is serving as the most important causes of mangrove destruction? – Justify from your point of view. **6.0**
4. a) Exemplify the natural constraints of mangrove ecosystem? **4.0**
b) Write down the role of fisheries resources as a *keystone* component of such ecosystem. **6.0**
5. a) Illustrate the linkage between brackish water ecosystem and mangrove resource? **4.0**
b) Draw essential comparisons and calculations in order to explain sustainability of *Sundarbans* and associated ecosystem. **6.0**
6. a) How do acid sulphate soils act as a major threat to mangrove vegetation? **4.0**
b) Describe the values of mangrove resources other than fisheries to boost the economy of Bangladesh. **6.0**

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Course No: **FBI-502(Compulsory)**, Course Title: **Fisheries Biodiversity**

Total Marks: 40, Time: 2 hours

Answer any **FOUR** questions. Illustrate your answer wherever necessary. Figure in the right margin indicates full marks.

1. a) "Knowledge on biodiversity can lead to erudite researchers of open water resources."- 4.0
Justify
- b) Describe the interconnecting nature of socio-economic values of fisheries biodiversity in aquatic conservation. 6.0
2. a) What is bio-diversification? 4.0
- b) How bio-diversification of non-piscine resources can bring ecological balance? 6.0
3. a) Differentiate "Rehabilitation" and "Restoration" of shallow wetlands. 4.0
- b) Provide a detail on wetland management techniques. 6.0
4. a) What are *ex-situ* and *in-situ* conservation? Which one is the best for long term conservation among them? - Why? 4.0
- b) Develop a mathematical model of Shannon Index in field situations. 6.0
5. a) Elaborate your understandings regarding biodiversity degradation of freshwater habitat. 4.0
- b) How marine environment can be substituted over them in eliminating such problems? 6.0
6. a) What is non-invasive exotic aggregation? Explain with examples. 4.0
- b) Develop an alternative economics of exotic aquaculture industries. 6.0

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Course No: **IFM-502 (Elective)**. Course Title: Integrated Farm Management
Total Marks: 40. Time: 2 hours

Answer any **FOUR** questions. Illustrate your answer wherever necessary. Figure in the right margin indicates full marks.

1. (a) Sketch an integrated farming system. 2.0
(b) Explain the importance of integrated aqua-farming in current context of Bangladesh. 4.0
(c) How the governments can provide support for the management of integrated aqua-farming? 4.0
2. (a) Give a comparison between environmental requirements of fish and rice. 2.0
(b) How will you modify rice fields for fish culture? 5.0
(c) Write a short note about fish cum horticulture management. 3.0
3. (a) What types of fish species are suitable for integrated livestock-aqua farming? 2.0
(b) Draw and describe the model of an ideal livestock-aqua farming. 6.0
(c) How livestock and fish improve the sustainability of farming systems? 2.0
4. (a) Why bio-security is need for aquaculture? 2.0
(b) Differentiate between bio-security and bio-safety. 2.0
(c) Whose involvements are important to an integrated approach to bio-security? 3.0
(d) What types of management practices are applied in fish farm for maintaining proper bio-security? 3.0
5. (a) What factors should be considered to plan and execute a integrated aqua farming? 3.0
(b) Distinguish between conventional and organic aqua farming. 2.0
(c) How an ecosystems approach to aquaculture is implemented? 5.0
6. (a) Briefly describe the socio-economic consideration of integrated farm management. 3.0
(b) "Integrated farming associated with health risk"- explain this statement. 2.0
(c) How will you reduce public health risks from pathogens in livestock-fish systems? 5.0

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M.S. in Fisheries Resources Management,
Course No. CBFM 502 (T), Course Title: Advanced Limnology (Theory)
July-December Semester Final Examination 2017
Total Marks: 40, Time: 2 hour

Answer any four (4) of the following questions.

1. a. What are the principles of Community Based Fisheries Management? 2
b. Describe CBFM from a global perspective. 6
c. Do you see any drawback for CBFM? How can you overcome those? 2

2. a. How GOB and private initiatives support CBFM? 2
b. Describe linkage among fish, fisheries and communities along a waterbody. 6
c. How FCD and FCDI work? 2

3. a. What are the important criteria of CBFM? 2
b. Describe characteristics of legal empowerment that is functional for right based fisheries management. 6
c. What are the basic property right regimes and leasing arrangement? 2

4. a. Who are the stakeholders for CBFM? 2
b. List some donor organizations and NGOs working for CBFM. What sort of services they provide? 6
c. How has CBFM been originated? What does sustainability of CBFM mean? 2

5. a. Why does conflict arise between CBFM and local influential groups? 2
b. Describe how GOB and private initiatives support CBFM. 6
c. Write notes on positive and negative impacts of FCDI? 2

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Course No: **WQA-502 (Compulsory)**, Course Title: Water Quality and Pollution Analysis
Total Marks: 40, Time: 2 hours

Answer any **FOUR** questions. Illustrate your answer wherever necessary. Figure in the right margin indicates full marks.

1. (a) Do you think water has special characters to support fishes as a living media? 2.0
(b) Which parameters are most important in determining water quality? 3.0
(c) Briefly describe the importance of water quality management in fisheries sector. 5.0
2. (a) Differentiate between pollution and contamination. 2.0
(b) "Human being affected by water pollution" - how? 3.0
(c) Briefly describe the major sources of land based and sea based pollutants in the Bay of Bengal. 3.0
(d) How does water pollution affect fish and fisheries? 2.0
3. (a) Which factors should be considered during re-circulatory aquaculture? 2.0
(b) What are the causes of coastal pollution due to point and non-point sources? 3.0
(c) Briefly describe the changes of physic-chemical parameters of water due to pollution. 5.0
4. (a) Why heavy metals are called highly toxic elements? 2.0
(b) "Preventive measure is the best way of ammonia control"- Justify this statement. 3.0
(c) Write down the determination procedure of alkalinity. 5.0
5. (a) Do you think lime is a fertilizer? 2.0
(b) "Nitrogen fertilizer is less important than phosphate fertilizer in aquaculture"- Explain this statement. 2.0
(c) What types of changes are found in different water quality parameters after fertilization? 3.0
(d) Briefly describe the methods of applying fertilizer in fish ponds. 3.0
6. (a) Differentiate between sewage and sludge. 3.0
(b) "Sewage pollution is a great barrier in water body"- explain the statement. 2.0
(c) Sketch and discuss the primary, secondary and tertiary treatment of industrial effluent. 5.0

Chittagong Veterinary and Animal Sciences University
M.S. in Fisheries Resources Management,
Course No. RFM 502 (T), Course Title: Riverine Fisheries Management (Theory)
July-December Semester Final Examination 2017
Total Marks: 40, Time: 2 hours

Answer any four (4) of the following questions.

1. a. List some suitable species for cage culture. Discuss the prospect of cage culture in Bangladesh. 2
b. Describe fish pass as a habitat improvement tool. 6
c. How can you mitigate the impacts of flood control dams on aquatic habitat? 2
2. a. Why was the New Fisheries Management Policy introduced in Bangladesh? What is its principle? 2
b. How various stakeholder groups differ from having access to resources? 6
c. What are the types of interactions among the organisms in food web? 2
3. a. According to the trophic level how the organisms are classified? 2
b. Describe the basic ecological and hydrological requirements of aquatic organisms. 6
c. Explain the reasons behind degradation of SIS biodiversity. 2
4. a. What are the stimuli for fish migration? 2
b. Which is the main stock of IMCs in Bangladesh? Write an essay on management of this valuable aquatic resource. 6
c. Do you think cage culture of fish in a riverine environment has some environmental issues? Why? 2
5. a. What is invasive species? Give three examples. 2
b. Describe the causes of fish biodiversity degradation. What are probable recommendations would you made? 6
c. What is destructive fishing gear? Describe the effects of illegal fishing practices. 2