

Department of Marine Bioresource Science
Chattogram Veterinary and Animal Sciences University
MS in Marine Bioresource Science Final Examination Jul-Dec' 2020
Course No: MSE-502 (T), Course Title: Marine Stock Enhancement (Theory)
Total Marks: 40, Time: 2 hours

Answer any 4 (four) questions. Figures in the right margin indicate full mark.

1. a) Write down your concept on stock enhancement? 3.0
b) What are the main types of fisheries enhancement? 3.0
c) How stock enhancement has established as a modern fisheries management approach? 4.0
2. a) Enlist potentials, problems and progress of stock enhancement of coastal fisheries. 5.0
b) What important guidelines should be considered in stock enhancement? 5.0
3. a) How GnRH play role in gonad maturation and fertilization? 4.0
b) Enlist the stimulating hormones and their doses used for artificial breeding in marine fishes. 3.0
c) What do you know about the successes in artificial breeding in marine fishes of Bangladesh? 3.0
4. a) What is the use of GSI in reproductive biology? 2.0
b) Which marine invertebrates are potential for artificial/controlled breeding in Bangladesh? 3.0
c) Describe the environmental control, stimulants and breeding processes of three commercially important marine invertebrates. 5.0
5. a) What is fish sanctuary? Give an example of a successful fisheries management through fish sanctuary in Bangladesh perspective. 5.0
b) What are MPA's? Give an overview of the Nijhum Deep MPA from marine fisheries conservation aspects. 5.0
6. a) Describe migratory pattern in fishes. 4.0
b) Write short notes on any two (02): 6.0
i. Sea ranching; ii. Hermaphroditism; iii. Genetic conservation; iii. EBFM;

Department of Marine Bioresource Science
Chattogram Veterinary and Animal Sciences University
MS in Marine Bioresource Science Final Examination Jul-Dec' 2020
Course No: MSE-502 (T), Course Title: Marine Stock Enhancement (Theory)
Total Marks: 40, Time: 2 hours

Answer any 4 (four) questions. Figures in the right margin indicate full mark.

1. a) Write down your concept on stock enhancement? 3.0
b) What are the main types of fisheries enhancement? 3.0
c) How stock enhancement has established as a modern fisheries management approach? 4.0
2. a) Enlist potentials, problems and progress of stock enhancement of coastal fisheries. 5.0
b) What important guidelines should be considered in stock enhancement? 5.0
3. a) How GnRH play role in gonad maturation and fertilization? 4.0
b) Enlist the stimulating hormones and their doses used for artificial breeding in marine fishes. 3.0
c) What do you know about the successes in artificial breeding in marine fishes of Bangladesh? 3.0
4. a) What is the use of GSI in reproductive biology? 2.0
b) Which marine invertebrates are potential for artificial/controlled breeding in Bangladesh? 3.0
c) Describe the environmental control, stimulants and breeding processes of three commercially important marine invertebrates. 5.0
5. a) What is fish sanctuary? Give an example of a successful fisheries management through fish sanctuary in Bangladesh perspective. 5.0
b) What are MPA's? Give an overview of the Nijhum Deep MPA from marine fisheries conservation aspects. 5.0
6. a) Describe migratory pattern in fishes. 4.0
b) Write short notes on any two (02): 6.0
i. Sea ranching; ii. Hermaphroditism; iii. Genetic conservation; iii. EBFM;

Department of Marine Bioresource Science
Chattogram Veterinary and Animal Sciences University
MS in Marine Bioresource Science Final Examination Jul-Dec' 2020
Course No: MSE-502 (T), Course Title: Marine Stock Enhancement (Theory)
Total Marks: 40, Time: 2 hours

Answer any 4 (four) questions. Figures in the right margin indicate full mark.

1. a) Write down your concept on stock enhancement? 3.0
b) What are the main types of fisheries enhancement? 3.0
c) How stock enhancement has established as a modern fisheries management approach? 4.0
2. a) Enlist potentials, problems and progress of stock enhancement of coastal fisheries. 5.0
b) What important guidelines should be considered in stock enhancement? 5.0
3. a) How GnRH play role in gonad maturation and fertilization? 4.0
b) Enlist the stimulating hormones and their doses used for artificial breeding in marine fishes. 3.0
c) What do you know about the successes in artificial breeding in marine fishes of Bangladesh? 3.0
4. a) What is the use of GSI in reproductive biology? 2.0
b) Which marine invertebrates are potential for artificial/controlled breeding in Bangladesh? 3.0
c) Describe the environmental control, stimulants and breeding processes of three commercially important marine invertebrates. 5.0
5. a) What is fish sanctuary? Give an example of a successful fisheries management through fish sanctuary in Bangladesh perspective. 5.0
b) What are MPA's? Give an overview of the Nijhum Deep MPA from marine fisheries conservation aspects. 5.0
6. a) Describe migratory pattern in fishes. 4.0
b) Write short notes on any two (02): 6.0
i. Sea ranching; ii. Hermaphroditism; iii. Genetic conservation; iii. EBFM;

Chittagong Veterinary and Animal Sciences University

Department of Marine Bioresource Science

Faculty of Fisheries

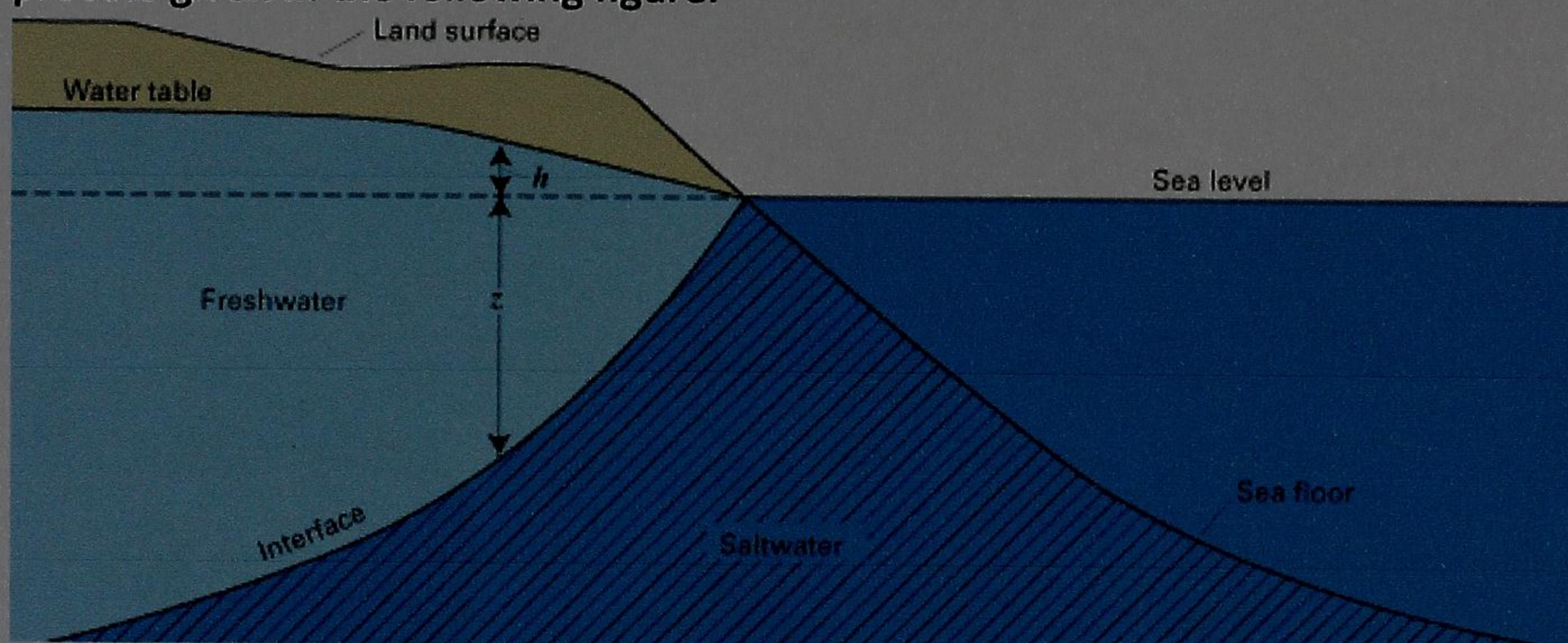
MS in Marine Bioresource Science, July to December Semester Final Examination 2020

Course Title: Eco-engineering and Coastal Defence; Course Code: ECD 502 (T)

Total Marks 40, Time: 2 hours

Answer any FOUR questions, illustrate your answer wherever necessary. Figures in the right margin indicate full mark.

1. a) What do you mean by build with nature? 3.0
- b) Sketch briefly the interactions of ecosystems, society and engineering interventions in response to climate change adaptation. 3.0
- c) How eco-engineering concepts transform to practical applications? 4.0
2. a) How can you define coastal hydrodynamics and morphodynamics? 2.0
- b) Categorize the classification of coastlines on the basis of different criteria. 4.0
- c) Interpret briefly the ecology of beaches with the effect of saltwater intrusion process given in the following figure. 4.0



3. a) What are the environmental driving forces for initiating eco-engineering intervention? 2.0
- b) Why the oysters treat as eco-engineers? In which process these reef structures develop in the future for ensuring coastal stability? 4.0
- c) How the coastal hydro-morphology contribute to develop coastal eco-engineering? 4.0
4. a) Write down the ecological contribution of artificial dunes in future coastal stability. 3.0
- b) Recognize the living shoreline components with anticipated benefits. 3.0
- c) Distinguish between conventional vs. ecosystem based coastal engineering. 4.0
5. a) What do you mean by beach protection? 2.0
- b) Specify some direct measures for beach protection. 3.0
- c) Discuss briefly the beach nourishment coupled with structural interventions. 5.0
6. a) Mention the significance of coastal structures. 2.0
- b) Write down the functions and significance of breakwaters in coastal geomorphology. 3.0
- c) Illustrate briefly the coastal structures available in the coastal belt including different types of breakwaters. 5.0

Chattogram Veterinary & Animal Sciences University, Chattogram

Department of Marine Bioresource Science

Master of Science in Marine Bioresource Science, July-December Semester, Final Examination, 2020

Course Code. **CMP-502 (Compulsory)**, Course Title: Coastal and Marine Pollution

Total Marks: 40, Time: 2 hours

Answer any **FOUR (04)** questions. Illustrate your answer wherever necessary.

1. Suppose, as an MS Fellow, you are assigned to study the aftermath of oil spill in the Bay of Bengal. Answer the following questions according to your observation.
 - a) Compile the various types of coastal and marine pollution sources in Bay of Bengal. Synthesize a plan for remediating oil spill in the coast. 2+4=
6
 - b) Denote the side effects of Mariculture in the surrounding environment. 4
2. As a researcher you are working on the ship-breaking pollution in Vatiary industrial area. Your primary target is to identify the major source of ecological degradation in that area.
 - a) Analyze the health issues among the surrounding communities caused by ship-breaking activities. 4
 - b) Formulate an eco-friendly strategy to protect Bay of Bengal from pollution. 6
3. Cox's Bazar sea beach, the longest natural sea beach in the world, is getting polluted fast for lack of proper waste management which is also creating public nuisance in an otherwise unspoiled natural setting.
 - a) What kind of legislations are required to conserve an endangered species? 4
 - b) Generate a proper waste management scheme in the popular tourist spots of Cox's bazar along with a defined monitoring system. 6
4. a) 'Oxygen demanding wastes are the major concern in an aquatic ecosystem'- Do you agree? If so, explain why. Diagrammatize the sewage treatment process within a flow chart. 2+2=
4
 - b) Articulate a plan as possible measures to mitigate the pollution due to COVID outbreak in inland water and coastal belt of Bangladesh. 6
5. a) Compare and contrast in between the features of EIA and IEM. 6
 - b) Discuss at least one national and one international legislation for pollution control and management 4

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

Department of Marine Bioresource Science

Master of Science in Marine Bioresource Science, July-December Semester Final Examination' 2020

Course No: MBT-502 (Compulsory), Course Title: Marine Biotechnology

Total Marks: 40, Time: 2 hours

Answer any FOUR questions. Illustrate your answer wherever necessary.

- 1 a) What do you mean by Marine Biotechnology? 1.0
b) Schematically represent how products and services can be developed using biotechnological approaches. 3.0
c) Discuss about the various applications of biotechnology in marine bioresource science field. 6.0
2. a) Why marine algae are considered as promissory for biofuel production? 2.0
b) Discuss the process of biodiesel production from marine algae. 5.0
c) Mention the sources and types of antioxidants that can be isolated from the microalgae. 3.0
- 3 a) List down the name of seaweed species available in Bangladesh that can be used to isolate agar, alginates, and carrageenan. 3.0
b) Discuss the process of agar and alginate extraction from seaweeds. 7.0
- 4 a) What do you know about sulfated polysaccharides? Discuss the extraction process of sulfated polysaccharides from seaweeds. 6.0
b) What is a carotenoid? Mention the source species and biological activities of major types of carotenoids that are isolated from seaweed. 4.0
- 5 a) What do you mean by bioactive compounds? 1.0
b) List down the major bioactive compounds that are isolated from marine organisms. 3.0
c) Discuss the procedure of chitin and chitosan extraction procedure from marine organisms. 6.0
- 6 a) What do you know about transgenic organisms? Why is fish the ideal organism for transgenesis? 2.0
b) Describe various methods in the production of marine transgenic fish. 5.0
c) What are the different biotechnological applications of transgenic marine organisms? 3.0

Department of Marine Bioresources Science
Chattogram Veterinary & Animal Sciences University, Chattogram
Master of Science in Marine Bioresources Science
January-June Semester Final Exam, 2020

Course Title: Marine Resources Conservation and Management; Course No. MRM – 502
(Compulsory)

Total Marks: 40. Time: 2 hour

(Answer any four)

1. a) Briefly describe about the fisheries catch management including its major criteria 5
- b) Give a complete overview about CBFM 5
2. a) Give explanation about following term: 3
 - Genetic diversity
 - Species diversity
 - Ecosystem diversity
- b) Discuss about the methods used to measure biodiversity 3
- c) Give a complete scenario of protected areas (PA) of Bangladesh and discuss about the challenges of PA management in Bangladesh 4
3. a) Briefly describe about the major issues regarding marine conservation. 5
- b) Give a complete overview of major conservation techniques practiced globally 5
4. a) Explain the significance of marking and tagging in marine fisheries research 3
- b) Discuss about the different methods of marking and tagging applied in fisheries research 4
- c) Define SWOT analysis and explain Bay of Bengal on the basis of SWOT analysis 3
5. a) "Bangladesh has a great potential of Blue revolution in near future" – explain the statement 3
- b) Discuss about the major management approaches of Bay of Bengal 4
- c) Short note (Answer any one) 3
 - i) International Agreements on Biodiversity Conservation
 - ii) EBFM

Chattogram Veterinary and Animal Sciences University, Chattogram
Department of Marine Bioresource Science
Master of Science in Marine Bioresource Science, July-December Semester Final Examination' 2021
Course No: **BOC-502(Compulsory)**, Course Title: **Biological Oceanography**
Total Marks: 40, Time: 2 hours

Answer any 4 (four) questions. Illustrate your answer whenever necessary.

1. a) Why do upwelling zones and downwelling zones support more biomass than areas of the open sea where these zones don't exist. 5.0
b) What are the effect of chemical processes on abundance and distribution of oceanic life? 5.0
2. a) What is role of benthic organisms during EPS formation? 3.0
b) Many factors are known to influence the settlement and alteration of benthic communities- Explain the statement. 7.0
3. a) How you will clarify the productivity of coral reefs? 4.0
b) Draw and describe the food web of seagrass bed and mangrove ecosystem. 6.0
4. a) Discuss the techniques of productivity measurement of marine phytoplankton. 3.0
b) Describe the factors that affect the growth and abundance of phytoplankton and zooplankton in the coastal and open water. 7.0
5. a) What are the roles of remote sensing in ocean fishing? 5.0
b) Which types of techniques are used to identify and locate of an unexplored fishery resources? 5.0
6. a) What is transboundary stock, straddling stock and highly migratory stock? 5.0
b) Describe the process of oil formation in the sea. 5.0