

Chattogram Veterinary and Animal Sciences University, Chattogram

Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year-1, Semester-1, Final Examination 2021

Course No: FTE 101 (T), Course Title: Fishing Technology (Theory)

Total Marks: 70, Time: 3 hours

Answer any 5 (five) questions from each section. Figures in the right margin indicate full mark. Use separate answer script for each section.

Section-A

1. a) Define "Fishing Technology". How can you apply your knowledge on "Fishing Technology" in the field? 3
- b) Do you think modern fishing gears can inflict damage to aquatic environment in the sea? Justify. 4
2. a) Differentiate between trawling and trolling. 2
- b) Is it possible that trammel net is made of only two walls instead of three? Cite reasons in favor of your answer. 2
- c) Mention the use of rotenone. Fish killed by rotenone is safe for human consumption. Justify. 3
3. a) Classify fiber. Give examples from each group. 3
- b) Denote: 210 Tex Z 200 × 2S 250 × 3Z 210. 2
- c) Discuss briefly the construction of fishing twine. 2
4. a) Write the name of important navigational equipment on a fish trawler. 2
- b) "Radar is called third eye of fisherman"- justify the statement. 2
- c) Illustrate the working principle of EPIRB. 3
5. a) Define net preservation. What are the advantages of net preservation? 3
- b) Describe the net preservation technique using CuSO₄. Write down its advantages and disadvantages. 4
6. a) Write in brief the operational procedure of MSBN. 3
- b) How zone of divergence and convergence helps to locate fishing grounds? 2
- c) Illustrate the working principle of FAD. 2
7. a) Mention the importance of fishing regulations. 2
- b) Briefly describe the main features of FAO code of practice for the responsible fishing. 5

Section-B

8. a) Define EEZ. Mention five important resource surveys conducted in the past in the EEZ area of Bangladesh for locating fishing grounds. 4
- b) Enlist common and scientific name of 6 (six) commercial fishes in the Bay of Bengal. 3
9. a) Write briefly the operation procedure of SONAR. 3
- b) Briefly describe fish detection methods. 4
10. a) Define fish stimuli. How chemical stimuli can be utilized to harvest fishes? 3
- b) Write down the post fishing activities on board vessel for commercial fishes in the Bay of Bengal. 4
11. a) What do you mean by long lining? Classify it. 3
- b) Write down the operation procedure of bottom trawl net. 4
12. a) Enlist the prohibited fishing methods according to "Marine Fisheries Ordinance-1983." 4
- b) When a foreign fishing vessel can enter in Bangladesh water without license? 3
13. a) Enlist the factors that are related to efficiency of fishing gears. 4
- b) What are the selection criteria of netting materials for fishing gears? 3
14. Write short notes (any TWO) of the following: 3.5 x 2 = 7
- a) Ghost fishing; b) TED; and c) Fishing principles.

Chattogram Veterinary and Animal Sciences University, Chattogram
Faculty of Fisheries
B.Sc. Fisheries (Hons.) Year-01, Semester-01, Final Examination, 2021
Course Code: FRS-101(T), Course Title: Fisheries Resources (Theory)
Full marks: 70; Time: 3 hours

Answer any 05 (five) questions from each section. Figures in the right margin indicate full marks. Use separate answer script for each section.

Section-A

1. a) Define fisheries resources. 2.0
b) Differentiate between biotic and abiotic resources. 2.0
c) Briefly describe the significance of fisheries resources for boosting the economy of Bangladesh. 3.0
2. a) What are the vital organizations involved in the fisheries sector of Bangladesh? 2.0
b) Give the sectoral policies of DoF. 2.0
c) Describe the functions of BFDC. 3.0
3. a) How can you explain exotic species and invasive species? 2.0
b) Write down the socio-economic importance of hilsa fishery in Bangladesh. 3.0
c) What are the purposes of introducing exotic fish species in Bangladesh? 2.0
4. a) Draw a structure of seaweed with labeling. 3.0
b) How seaweed differs from seagrass? 2.0
c) Briefly describe the uses of seaweed. 2.0
5. a) What are the major fish groups of Bangladesh? 1.0
b) Enlist the major SIS of Bangladesh. 3.0
c) Briefly discuss the importance of SIS in Bangladesh. 3.0
6. a) "Cooperative act as an autonomous organization"- Justify this statement. 2.0
b) Mention stations and substations of BFRI. 2.0
c) Write down the fisheries activities of BRAC. 3.0
7. a) Why are hilsa declared as GI for Bangladesh? 2.0
b) Briefly describe the life cycle of hilsa fish. 4.0
c) Enlist the gear used for catching hilsa. 1.0

Section B

8. a) Define creek. 1.0
b) Write down the importance of creeks in hilly area. 4.0
c) "Haor is called inland sea"- Justify this statement. 2.0
9. a) What do you mean by recreational fishery? 1.0
b) What are the different forms of recreational use of waterbodies? 3.0
c) Outline your plan to declare a specific waterbody of Bangladesh as recreational fishery. 3.0
10. a) "All invasive species are exotic species but all exotic species are not invasive"- Justify. 2.0
b) Enlist 5 exotic fish species with their common name, scientific name and country of origin. 3.0
c) Why did Bangladesh Government ban the culture of African Magur? 2.0
11. a) Differentiate between shrimp and prawn. 2.0
b) List five commercially important crustacean species in Bangladesh with their scientific name and common name. 2.0
c) Write down the importance of non piscine aquatic organism for increasing the global aquaculture production. 3.0
12. a) Give an example of anadromous fish and why they are called so? 2.0
b) Describe the migration pattern of hilsa fish. 2.0
c) Do you think the taste of hilsa vary from marine to fresh water environment and why? 3.0
13. a) Define fish seed. 2.0
b) What are the purposes of artificial seed production? 2.0
c) Enlist the problems of artificial seed production in hatchery and provide suggestions to overcome those problems. 3.0
14. a) Define fish fry and fingerling. 1.0
b) Write down the present status of IMCs seed production in the Halda River. 3.0
c) Describe the potential causes of degradation and management measures for the restoration of natural spawning ground of IMCs in that river. 3.0

Chattogram Veterinary and Animal Sciences University, Chattogram

Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year -01, Semester-01, Final Examination' 2021

Course No: BCH-101 (T), Course Title: **Biochemistry (Theory)**

Total Marks: 70

Time: 3 hours

Answer any 3 (Three) questions from each section where question number 1(One) and 5 (Five) are compulsory. Figures in the right margin indicate full marks. Use separate answer script for each section.

Section-A

1. a) Define biochemistry and biomolecule. Enumerate the principal biomolecules found in a cell. Differentiate among three of these in terms of definition, monomeric unit, and bond. 2+1+3=6
- b) Compare and contrast between a eukaryotic cell and a bacterial cell. 2
- c) Briefly describe the scope of biochemistry in fisheries study. 3
2. a) Define the following terms: (i) Molecule, (ii) Element, (iii) Atom, and (iv) Polysaccharides 1×4=4
- b) Draw the structure of the following sugars in Haworth perspective formula:
(i) Glucose, (ii) Fructose, and (iii) Ribose 1×3=3
- c) 'The polysaccharides starch and glycogen are composed of same type of monosaccharide but differ from each other'-Explain. 3
- d) Differentiate between any one of the following pair:
(i) Maltose vs Lactose and (ii) Mucopolysaccharides vs Glycoprotein 2
3. a) What is ester? Draw the structure of a simple lipid with its biological function. 1+2=3
- b) Classify lipids with examples. 3
- c) What is essential fatty acid? Write down the structure of a hydroxyl fatty acid and ω -3 fatty acid. 3
- d) Vegetable oil is more stable than animal fat-Explain. 2
- e) Which process will you follow to characterize a supplied sample of the fats or oil for determining the degree of unsaturation? 1
4. a) Define amino acid. Classify amino acid based on polarity. 1+2=3
- b) Draw the structure of the following peptide with its corresponding code; E-C-G. 3
- c) Write down the classification of proteins based on their biological functions. 2
- d) Briefly describe the method of amino acid sequencing. 4

Section-B

5. a) Define nucleotide. Differentiate between purine and pyrimidine bases based on their structure. 2
- b) Why DNA is called genetic material? "DNA is more stable than RNA"-Explain. 2
- c) What is 'Chargaff's Rule'? Write down the specific functions of the following RNA (i) mRNA, (ii) tRNA, (iii) rRNA, and (iv) SnRNA. 1+2=3
- d) Define central dogma. Briefly describe the process of replication. 1+3=4
6. a) Define gluconeogenesis. Write down the bypass reactions of gluconeogenesis. 1+2=3
- b) What is Lactate fermentation? Why it is an essential metabolic process during vigorous muscular activity in fish? 1+2=3
- c) Differentiate between β -oxidation and fatty acid biosynthesis. 3
- d) What is the end product of an odd chain fatty acid when it is oxidized via β -oxidation? How this end product is further oxidized into CO_2 and H_2O ? 1+2=3
7. a) What is enzyme active site? Mention two salient features of active site. 1+2=3
- b) Name the factors affect the enzyme activity. State the influence of any two of them. 1+2=3
- c) What is meant by "protein denaturation"? Briefly state the changes in physical, chemical and biological properties of natural protein. 1+2=3
- d) In DNA samples isolated from two unidentified species of bacteria, suppose 'X' and 'Y', adenine makes up 32% and 17%, respectively, of the total nitrogenous bases. What relative proportions of other nitrogenous bases present in the DNA samples? Suggest which species of bacteria could tolerate high temperature. Justify your answer. 2+1=3
8. Write short notes any 4 (four) of the following: (i) Hormone, (ii) Transamination, (iii) Bioluminescence, (iv) TCA cycle, (v) Rancidity, (vi) Antifreeze protein, and (vii) Urea cycle 3×4=12

Chattogram Veterinary and Animal Sciences University, Chattogram
Faculty of Fisheries
B. Sc. Fisheries (Hons.) Year-01 Semester-01, Final Examination, 2021
Course No: CSC-101 (T), Course Title: Computer Science (Theory)
Total Marks: 70, Time: 3 hours

*Answer any 5 (five) questions from each section. Figures in the right margin indicate full marks.
Use separate answer script for each section. Splitting answer is strongly discouraged.*

Section-A

1. a) How does the high-level language overcome the limitations of the machine language? 2
b) Differentiate among the assembler, the compiler and the interpreter. 2
c) Subtract 867 from 768 using 1's complement. 3
2. a) Define bit, byte and word. Differentiate between volatile and non-volatile memory of a computer system. 4
b) Define algorithm? What are the characteristics necessary for a sequence of instruction to qualify as an algorithm? 3
3. a) Draw the truth table for AND and OR gate of three variables. 2
b) Define register. Briefly explain the functions of commonly used registers. 3
c) Draw a mesh topology for five computers and compute the total number of connection available in the network using formula. 2
4. a) Mention two basic types of printers used nowadays along with their relative advantages and disadvantages. 4
b) Carry out the following conversions: 3
i) $(13.6875)_{10} = ()_2$ ii) $(101.110)_2 = ()_{10}$ iii) $(39.B8)_{16} = ()_{10}$
5. a) Write down the difference between positional and non-positional number system. 2
b) Draw the flow of process states in multiprogramming. 2
c) Prove the statement $(x.y + x'.y).y' = 0$ using postulates. 3
6. a) Differentiate between primary and secondary storage. 2
b) What is DBMS? Illustrate the main components of a DBMS. 2
c) Differentiate between system software and application software in three points. 3
7. a) List out five input and five output devices. 2
b) Define word size. How does the word size contribute to the processing speed? 2
c) Describe different types of processor with their uses. 3

Section-B

8. a) Draw the logical architecture of memory and CPU. 2
b) "Registers are the part of main memory". Explain whether the statement is true or not. 2
c) How many memory organizations are there? Which memory organization is better in terms of processing speed? Justify your answer. 3
9. a) Draw and explain the relationships among hardware, software and users. 2
b) Define OSS. Describe the advantages of public domain software. 3
c) How is the system performance measured? 2
10. a) Illustrate different process management mechanism. 3
b) Draw and describe the functions of process control block (PCB). 2
c) How does the time-sharing operating system work? Explain with example. 2

11. a) What is virtual memory? How does the concept of virtual memory work? 2
- b) Define OS. Narrates the main functions of OS. 2
- c) Draw and explain the basic organization of a computer system. 3
12. a) Construct a logic circuit diagram for the Boolean expression: $(\bar{x} + \bar{y}). (x + z). (y + z)$ 3
- b) What do you understand by full adder? Construct logic circuit diagram of full adder. 4
13. a) Define protocol. List out five web browser used to access internet. 2
- b) Describe different data transmission mode with examples. 2
- c) Illustrate commonly used transmission medias with their applications. 3
14. a) What is multiplexing? Narrates time-division multiplexing with proper figure. 2
- b) Briefly describe the roles of communication protocols during transmission. 2
- c) Draw the proper figure to illustrate the way of communication in optical fiber system. 3

Chattogram Veterinary and Animal Sciences University, Chattogram
Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year -01, Semester-01, Final Examination' 2021

Course No: FZO-101 (T), Course Title: **Fisheries Zoology (Theory)**

Total Marks: 70

Time: 3 hours

Answer any 5 (five) questions from the followings. Illustrate your answer wherever necessary. Figures in the right margin indicate full mark. Use separate answer script for each section.

Section-A

1. a) What do you understand by animal diversity and animal kingdom? 2.0
b) "Classification is the basis for studying the animals"- Justify the statement. 2.0
c) Summarize the importance of studying zoology in context of fisheries. 3.0
2. a) What are the differences between diploblastic and triploblastic animals? 2.0
b) Classify animals on the basis of coelom. 2.0
c) What are the differences between cilia and flagella? 3.0
3. a) Explain the following terms: ostia, spicule and pinacocyte. 3.0
b) Compare among the three types of body form of Porifera. 2.0
c) Are sponges' plant or animal? Justify your answer. 2.0
4. a) What is haemocoel? 1.0
b) Why phylum Arthropoda occupies the first placed in the animal kingdom? 3.0
c) Summarizes the economic significance of the phylum Arthropoda. 3.0
5. a) What is pseudocoelom? 1.0
b) Write the identifying characters of Mollusca. 3.0
c) Draw and label a typical molluscan animal. 3.0
6. a) What do you about metamerism? 1.0
b) Mention the characteristics of tadpole larvae. 3.0
c) "Hibernation and aestivation are the basic adaptive mechanisms of frog in adverse environment"- justify. 3.0
7. a) What are the differences between crocodile and alligator? 2.0
b) Briefly describe the life cycle of a crocodile. 5.0

Section-B

8. a) How you will differentiate between Protista and Protozoa? 2.0
b) Enlist the classes of Protozoa with one example from each class. 2.0
c) Write the labeled diagram of a *Paramecium*. 3.0
9. a) "Polymorphism is unique body morphology of Cnidarian"- Justify the statement. 3.0
b) Briefly describe the life cycle of a Cnidaria having both polyp and medusa stages. 4.0
10. a) What do you know about the phylum Platyhelminthes? 2.0
b) Point out key identifying characters of Platyhelminthes. 3.0
c) "Platyhelminthes causes severe diseases to human"- justify. 2.0
11. a) Write down the morphological features of a nematode. 2.0
b) Discuss the life cycle of a nematode found in fish. 5.0
12. a) Write down the functions of the following organ: clitellum, gizzard, crop and setae. 3.0
b) Explain the economic significance of Annelida. 4.0
13. a) What do you understand by adaptation? 2.0
b) "Adaptations give rises to new species in a multiple environment"- argue with this statement. 5.0
14. Write short notes on any **02 (Two)** of the following: 3.5×2=7.0
a) Choanocyte; b) Crustacea; c) Vertebrates; and d) Dolphin

Chattogram Veterinary and Animal Sciences University, Chattogram
Faculty of Fisheries
B.Sc. Fisheries (Hons.) Year-01, Semester-01, Final Examination, 2021
Course Code: FWE-101(T), Course Title: Freshwater Ecology (Theory)
Full marks: 70; Time: 3 hours

*Answer **any 05 (five)** questions from each section. Figures in the right margin indicate full marks. Use separate answer script for each section.*

Section-A

- | | | | |
|----|----|--------------------------------------------------------------------------------|-----|
| 1. | a) | Define ecology. | 1.0 |
| | b) | Differentiate between population ecology and community ecology. | 3.0 |
| | c) | Describe the importance of freshwater ecology in fisheries. | 3.0 |
| 2. | a) | Narrate the functions of ecosystem. | 3.0 |
| | b) | How does ecosystem maintain their state of equilibrium? | 4.0 |
| 3. | a) | Differentiate between decomposers and detritivores? | 3.0 |
| | b) | How do you differentiate among individuals, species, population and community? | 4.0 |
| 4. | a) | What do you mean by ecosystem? | 1.0 |
| | b) | "Fish pond is an ecosystem"-explain. | 4.0 |
| | c) | Differentiate between habitat and ecological niche. | 2.0 |
| 5. | a) | Define food chain. | 1.0 |
| | b) | "The shorter the food chain, the greater the available energy"-explain. | 3.0 |
| | c) | Show the relationship among trophic level, food chain and food web. | 3.0 |
| 6. | a) | What are the general principles associated with ecological succession? | 3.0 |
| | b) | Explain the mechanism of succession of a community. | 4.0 |
| 7. | a) | Define limiting factor. | 1.0 |
| | b) | Explain the "Liebig's Law of Minimum". | 3.0 |
| | c) | Write down the ecological principles associated with the "Law of Tolerance". | 3.0 |

Section-B

- | | | | |
|-----|----|-------------------------------------------------------------------------------------------------|-----|
| 8. | a) | Differentiate autecology and synecology. | 2.0 |
| | b) | How does ecological study help to protect environment? | 5.0 |
| 9. | a) | Differentiate between lentic and lotic habitat. | 3.0 |
| | b) | Explain thermal stratification of a lake. | 4.0 |
| 10. | a) | Show the energy flow model in an ecosystem. | 2.0 |
| | b) | Classify ecological pyramids with graphic representations. | 5.0 |
| 11. | a) | What is ecotone and edge effect? | 2.0 |
| | b) | How do you understand the climax condition of a community? | 5.0 |
| 12. | a) | Which form of dispersion commonly found in nature and why? | 3.0 |
| | b) | Compare between the population limiting factors. | 4.0 |
| 13. | a) | What are the benefit of aggregation for a population? | 2.0 |
| | b) | Explain the difference between i. protocooperation and mutualism; ii. parasitism and predation. | 5.0 |
| 14. | a) | Why does full expression of biotic potential of an organism restrict? | 2.0 |
| | b) | How will you predict the fate of a population to see its different age classes? | 5.0 |