

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

Year -01, Semester-01, Final Examination' 2014

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

Total Marks: 70, Time: 3 hour

Answer any 05 (five) questions from each section

Section-A

1. a) Define Fisheries. 1.0
b) Define pelagic, demersal and shell fish with example. 3.0
c) How fishing principles ensures the suitable fish stock? 3.0
2. a) Write down the factors generally responsible for choosing netting materials for fishing gear. 3.0
b) Describe briefly the different parts of modern fish trawler. 4.0
3. a) What is UNCLOS? 1.0
b) Elaborate the term: 400TexZ250 x 2S180 x 3Z150. 3.0
c) Do you think nylon is an ideal fishing net fiber? Justify your answer. 3.0
4. a) Define net preservation. What are the objectives of net preservation? 3.0
b) Briefly describe net preservation technique using CuSO₄. What are its advantages over other net preservation techniques? 4.0
5. a) What do you know about fishing without gears? Is it traditional or commercial type of fishing method? 4.0
b) Define Tex, Denier and English cotton count system. 3.0
6. a) Differentiate between inboard and outboard engine. 2.0
b) Classify fiber. Write down the trade name and chemical name of 5 synthetic fibers. 4.0
c) What is artisanal fishing? 1.0
7. Write short notes on: a) Fabrication of fishing net, b) Trammel net. 7.0

Section-B

8. a) Describe briefly the fishing regulation of freshwater fisheries in Bangladesh. 5.0
b) Differentiate between trawling and trolling. 2.0
9. a) Define jigging. What is its principle? 3.0
b) Name the commercial fishing methods used in the Bay of Bengal. Briefly describe any one of them. 4.0
10. a) Define LORAN and SONAR. 1.0
b) Describe briefly the factors considered for fish location in the sea. 4.0
c) Write a short note on ESN. 2.0
11. a) What is long lining? Classify it. 1.5
b) Describe briefly the post fishing activities on board vessel. 3.5
c) What is FAD? Where it is used? 2.0
12. a) Classify trawling. How many trawlers are currently operating in the Bay of Bengal? 2.0
b) Draw and label a typical purse seine net. 5.0
13. a) What is navigation? Write the names of important navigational equipment on a fish trawler. 4.0
b) Draw and label of a typical trawl net. 3.0
14. a) What is TED? Schematically show TED in a commercially important fish net. 4.0
b) Differentiate between galvanotaxis and oscillotaxis. 3.0

Chittagong Veterinary and Animal Sciences University, Chittagong
B.Sc. Fisheries (Hons.) Year -01, Semester-01, Final Examination' 2014
Course Code: BCH -101(T); Course Title: Biochemistry
Total Marks: 70; Time: 3 hour

Figures in the right margin indicate full marks. Answer any "THREE" questions from each section of which question number 1 and 5 are compulsory. Use separate answer script for each section.

Section-A

- | | | | |
|----|----|--|-------|
| 1. | a) | Explain briefly the following: Gluconeogenesis, Glycogenesis, Glycogenolysis, Oxidative phosphorylation. | 3 |
| | b) | Aerobic glycolysis produces more energy than anaerobic glycolysis-Justify. | 2 |
| | c) | Describe the biological function of carbohydrate. | 3 |
| | d) | What are the irreversible steps of glycolysis? What is invert sugar? | 2+1=3 |
| 2. | a) | Define the following: Amino acid, Peptide, Polypeptide, Protein. | 3 |
| | b) | How are amino acids classified on the basis of their backbone structure? | 3 |
| | c) | What is meant by denaturation of protein? Briefly discuss the factors that are involved in protein denaturation. | 1+3=4 |
| | d) | How will you evaluate the nutritive value of fish protein concentrate? | 2 |
| 3. | a) | Define fatty acid. Write down the common name, systematic name and structure of the following fatty acid: (i) C16:1 (ii) C18:2, and (iii) C20:4. | 1+3=4 |
| | b) | What do you understand by Omega-3 and Omega-6 fatty acids? Discuss their nutritional importance. | 2+2=4 |
| | c) | Define rancidity. Classify lipoproteins with their specific functions. | 1+3=4 |
| 4. | a) | Name the bases commonly found in nucleic acid. Distinguish between nucleotide and nucleoside. | 2+2=4 |
| | b) | What is replication? Explain with suitable diagram, the semi-conservative replication of DNA. | 1+3=4 |
| | c) | What is cloning? Show with flow diagram, an over view of cloning strategies in recombinant DNA technology. | 1+3=4 |

Section-B

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|----|----|--|-----------|
| 5. | a) | Define carbohydrate. Write down the 3 important disaccharides with their structure, source and functions. | 1+3=4 |
| | b) | Compare and contrast any two of the following pair in terms of their structure and functions: (i) Starch and Glycogen (ii) Heparin and Chondroitin sulfate and (iii) Glycoprotein and Lipoprotein. | 3 |
| | c) | Define mutarotation. Write down the structure of glucose and locate the anomeric carbon, primary alcohol and asymmetric carbon of it. | 1+2=3 |
| | d) | What is mutarotation? | 1 |
| 6. | a) | Differentiate between hormones and enzymes. | 4 |
| | b) | Write down the origin of the following hormones with their specific function.
(i) Estrogen (ii) Androgen (iii) FSH (iv) Glucagon (v) Epinephrine
(vi) Insulin (vii) Oxytocin (viii) LH. | 0.5 × 8=4 |
| | c) | Define the following terms: (i) Central Dogma (ii) Clone (iii) Gene (iv) cDNA
(v) Exon (vi) Genetic code (vii) Proteomics and (viii) Plasmid | 0.5 × 8=4 |
| 7. | a) | Define metabolism. Write down the flow sheet of catabolic pathways of biomolecules. | 1+3=4 |
| | b) | Define the following terms: (i) Mucoprotein (ii) Glycoprotein (iii) Indispensible amino acid and (iv) Zwitter ion. | 4 |
| | c) | What is the central molecule of metabolism of carbohydrate, protein and lipid? Write down the energy yielding steps of Citric Acid Cycle. | 1+3=4 |
| 8. | a) | What are lipids? Classify lipids with suitable example(s). | 1+3=4 |
| | b) | Define restriction enzymes. Describe biosynthesis of proteins. | 1+4=5 |
| | c) | Define the following terms: (i) Free radicals (ii) Entropy (iii) Tm | 1 × 3 = 3 |

Chittagong Veterinary and Animal Sciences University, Chittagong

B. Sc. Fisheries (Hons.) Year -01, Semester-01, Final Examination` 2014

Course No: CSC-101 (T), Course Title: **Computer Science**

Total Marks: 70, Time: 3 hours

Answer **4 (four)** questions from each section where **question 1 and 6 are compulsory**.

The figures in the margin indicate full mark.

Section-A

1. a) Convert the binary number to decimal equivalent 1.5
10110111.11₍₂₎
- b) Convert the hexadecimal number to decimal: 8A6E₍₁₆₎ 1.5
- c) What do you understand by 1's complement and 2's complement method? 02
2. a) Distinguish between digital computer and analog computer. Briefly explain the data processing cycle of computer system. 06
- b) What do you mean by computer generation? Describe the characteristics of fifth generation computers. 04
3. a) What is software? Differentiate the two main categories of computer software. 04
- b) Write short notes on super computer. 04
- c) Distinguish between offline and online devices. 02
4. a) How does the computer accept input from the keyboard? Explain with proper diagram. 04
- b) List at least four characteristics that you have to consider when you are going to buy a monitor. Why? 02
- c) Explain how a CRT monitor displays images. 04
5. a) How does a laser printer print a page? 05
- b) Define the term database and database management system (DBMS). 02
- c) Differentiate between flat -file databases and relational databases. 02
- d) Write the name of some popular web browser. 01

Section-B

6. a) Add the following binary number: 101111.11 and 11001.11 01
- b) Calculate the difference: 1100110011-110010110 02
- c) List two reasons why computer use the binary number system. 02
7. a) Explain the difference between RAM and ROM. 02
- b) What do you mean by data bus and address bus? 02
- c) Write short notes on (any three) 06
 - i) Impact printer and non-impact printer
 - ii) Disk formatting and Disk defragmentation
 - iii) CISC and RISC
 - iv) EBCDIC and ASCII
8. a) Define Operating system. Discuss the major functions of an operating system. 05
- b) List the four benefits of using a network. Differentiate between LANs and WANs. 05
9. a) What is network topology? Write short notes on three basic topologies. 05
- b) What do you mean by IP address and subnet mask? 02
- c) Describe the application of modem with an example. 03
10. a) Explain how computer data travels over telephone lines. 02
- b) List three types of magnetic and optical storage device. 02
- c) Define (any two) 04
 - i) Multitasking
 - ii) Hardware
 - iii) Cache memory
- d) What are the uses of USB ports? 02

Chittagong Veterinary and Animal Sciences University, Chittagong
Faculty of Fisheries

Year -01, Semester-01, Final Examination 2014
Course No: FWE-101(T), Course Title: Freshwater Ecology (Theory)
Total Marks: 70. Time: 3 hour

Answer any 05 (five) questions from each section. *The figures in the right margin indicate full mark.*

Section-A

1. a) Define ecology, population and community. 3
b) What are the subdivisions of ecology? 2
c) Define food chain. Why do we study food chain? 2
2. a) Write down the difference between habitat and ecological niche. 3
b) Briefly discuss about ecological pyramid. 4
3. a) What are the components of an ecosystem? 3
b) Briefly describe the ecological succession. 4
4. a) Write down the zonation of lotic system. 3
b) Briefly describe the ecological classification of freshwater organisms. 4
5. a) Define population ecology. What are the properties of populations? 3
b) Briefly describe the types of population interactions. 4
6. a) What are the sources of river? 3
b) Write down the sources and pathways of three important rivers in Bangladesh. 4
7. Write short notes on any two of the following: 3.5x2
a) Law of Minimum; b) Ecotone and edge effect; and c) Trophic Level. = 7

Section-B

8. a) Define ecosystem with the related example in aquatic system with diagram. 4
b) Describe briefly the thermal stratification in lake. 3
9. a) Write down the homeostasis of aquatic system. 3
b) Describe briefly the energy flow of an ecosystem. 4
10. a) Explain the "Law of Tolerance". 3
b) Write down the ecological principles associated with Law of Tolerance. 4
11. a) What is river? Classify river based on age. 3
b) What are the specialized adaptations of running water communities? 4
12. a) Write down the zones exist in a lake. Illustrate figure. 3
b) Define lake. Write down the differences between oligotrophic and eutrophic lakes. 4
13. a) Explain the Allee's principle of aggregation. 3
b) Briefly describe population dispersion. 4
14. Write short notes on any two of the following: 3.5x2
a) Modification of floodplain system; b) The Meghna River system; c) Roles of river in human civilization; and d) Ecosystem of a river. = 7

Chittagong Veterinary and Animal Sciences University, Chittagong
B. Sc. Fisheries (Hons.) Year -01, Semester-01, Final Examination' 2014
Course Code: FWA -101(T); Course Title: Freshwater Aquaculture
Total Marks: 70; Time: 3 hours

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

Section-A

1. a) Define Aquaculture. Write objectives of aquaculture. 2
 b) Describe the behavioral responses of fish against anesthesia. 3
 c) Compare traditional and improved traditional aquaculture practiced in Bangladesh. 2
2. a) Name the physical and chemical parameters of water for aquaculture. 2
 b) Why the pond dyke should be made properly sloped? 3
 c) Discuss various types of lime used in fish farming in Bangladesh. 2
3. a) Mention the necessity of fertilization in fish pond. 2
 b) How liming reacts on the effectiveness of fertilization? 3
 c) What are the negative side effects of excessive fertilization? 2
4. a) What are the objectives of induced breeding? 2
 b) Mention the recommended dose of inducing agent for some common fishes in Bangladesh. 5
5. a) Write detail about the culture of carps with special reference to Indian Major Carps. 4
 b) Enumerate perennial bundh used in carp breeding. 3
6. Describe the criteria usually followed to select an aquafarm in Bangladesh. 7
7. Write short note on any two of the following: 3.5x2=7
 a) Integrated aquaculture
 b) Pen aquaculture
 c) Organic aquaculture

Section-B

8. a) Differentiate between fry and fingerling stage of fish. 2
 b) What is the main benefit of hatchery production rather than natural seed source? 3
 c) "Brood banks contribute significantly in fish seed production in Bangladesh" - Justify. 2
9. a) Write down the advantages and disadvantages of aquatic weeds. 2
 b) Why we need to remove the aquatic weeds from a fish pond? 2
 c) Describe different methods usually followed to remove aquatic weed in an aquafarm. 3
10. a) What is the importance of composting? 2
 b) Describe the various stages of composting. 3
 c) What do you know about vermi- compost? 2
11. a) Mention the factors associated with fish transportation. 2
 b) What are the advantages of conditioning fish before transportation? 3
 c) Write down the disadvantages of closed system transportation. 2
12. a) What are the importances of cage culture? 2
 b) Discuss the construction and placement of cages in aquaculture. 5
13. a) Describe the advantages and disadvantages of natural fish fry. 2
 b) Why fish fry catch is encouraged in Halda river? 2
 c) Why a good hatchery design is essential to successfully run a fish hatchery? 3
14. Write down short notes on the following:
 a) Red tide 3
 b) Inbreeding 2
 c) Predator control 2

Chittagong Veterinary and Animal Sciences University, Chittagong
B.Sc. Fisheries (Hons.) Year-1, Semester-1 Final Examination' 2014
Course Code: FZO-101; Course Title: Fisheries Zoology
Full Marks: 70; Time: 3 hour

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

Section -A

- | | | |
|----|--|----------|
| 1. | a) Who use the term Porifera first? | 1 |
| | b) What does it mean? | 1 |
| | c) Describe the basic structure of Porifera with neat diagram. | 5 |
| 2. | a) Write down the name of different shell layers of mussel. | 1 |
| | b) Briefly describe the digestive system of mussel. | 6 |
| 3. | a) Give taxonomic classification of turtle. | 2 |
| | b) How turtle differs from tortoise? | 1 |
| | c) Briefly describe the breeding behavior of turtle. | 4 |
| 4. | a) Why adaptation is important? | 2 |
| | b) Describe the structural adaptation and behavioral adaptation. | 5 |
| 5. | a) Classify mollusca upto class level and give one example of each class. | 4 |
| | b) Show morphological difference between <i>Loligo</i> and <i>Octopus</i> (at least three differences) | 3 |
| 6. | a) What is paramecium? | 1 |
| | b) Draw a diagram of <i>Paramecium</i> and label its different parts. | 4 |
| | c) How food vacuole is formed in <i>Paramecium</i> . | 2 |
| 7. | Write short notes on any two of the following : | 3.5×2= 7 |
| | a) Oligochaeta ; | |
| | b) Economic importance of crustacean; and | |
| | c) Functional adaptation. | |

Section-B

- | | | |
|-----|--|----------|
| 8. | a) What is gastrocoel? Write down its functions in Coelentereta. | 2 |
| | c) Briefly describe it's the economic significance of Coelenterata. | 5 |
| 9. | a) What do you mean by hermaphroditism, oviparous and viviparous? Give example of each type. | 2 |
| | b) Write down five general characteristics of platyhelminthes mentioning the digestive and excretory system. | 2 |
| | c) Write down the characters of Trematoda and Turbellaria. | 3 |
| 10. | a) Name four important characters of starfish. | 2 |
| | b) Describe the water vascular system/ ambulacral system of starfish. | 5 |
| 11. | a) Write down differences between shrimp and prawn. | 1 |
| | b) Describe the digestive system of shrimp with diagram. | 6 |
| 12. | a) Describe the life cycle of Dolphin. | 7 |
| 13. | a) Write down the advancement of phylum chordate over other phylum. | 3 |
| | b) How temperature, salinity and light influence the animal in aquatic environment? | 4 |
| 14. | Write short note on any two of the following: | 3.5×2= 7 |
| | a) Communication systems of crocodile ; | |
| | b) Reptiles; and | |
| | c) Snail. | |

Figure in the right margin indicates the full mark. Answer any five questions from each section. Use separate answer script for each section

Section -A

1. a) What do you mean by fisheries resources? 2.0
 b) 'Classical economics recognizes three categories of resources' - Discuss in fisheries aspects. 3.0
 c) Distinguish between culture fisheries and capture fisheries of Bangladesh with examples. 2.0

2. Fill up the blanks mentioned below: 14×0.5= 7.0
 - a) nautical miles from coast line called territorial water.
 - b) nautical miles from coast line called exclusive economic zone.
 - c) Up to fathom depth from the coast line called Continental shelf.
 - d) Total Coast line covers about km begins western boarder of Sunderban upto end of Teknaf.
 - e) Fish intake/ person/ year about..... kg.
 - f) Fish demand/ person/ year about..... kg.
 - g) Fish demand/ year for total population lac MT .
 - h) No. of freshwater fish species.....
 - i) No. of marine water fish species.....
 - j) No. of freshwater prawn species.....
 - k) No. of marine shrimp species.....
 - l) No. of private Golda hatchery in Bangladesh.....
 - m) No. of private Bagda hatchery in Bangladesh.....
 - n) No. of exotic fish species.....

3. a) Mention the boundary of the Bay of Bengal. 3.0
 b) Name the different major fishing grounds of the Bay of Bengal with their locations. 3.0
 c) Why it is called Bay? 1.0

4. a) Define Act, Law and Ordinance. 2.0
 b) Enlist ten (10) important act, rules and policies related to fisheries. 2.5
 c) What are the objectives and principles of NFMP-1986? 2.5

5. a) Define fish seed. 1.0
 b) Ment on the techniques of artificial fish seed production in the country. 2.0
 c) Note short the objectives of artificial fish seed production in the country. 4.0

6. a) What is the breeding season of Hilsha fish? 1.0
 b) Enlist the location and banning period of Hilsha sanctuary declared and proposed by Bangladesh government. 3.0
 c) Which regulations has been implementing by the government to protect and conserve juvenile and gravid Hilsha? 3.0

7. Write short note on: (any two) 2×3.5= 7.0
 - a) Non-piscine mollusks
 - b) Recreational Fisheries
 - c) National Fish Policy
 - d) BFRI

Section-B

8. a) Define Beel and Floodplain. 2.0
 b) Differentiate between 'Haor' and 'Baor'. 2.0
 c) Write down the important features of the main river systems of Bangladesh. 3.0

9. a) What is UNCLOS? 1.0
 b) Clearly draw the schematic map of maritime zones of a coastal country. 2.0
 c) Briefly describe the Territorial water, Contiguous zone, EEZ and Continental Shelf on the basis of UNCLOS. 4.0

10. a) Write down the different carp spawning grounds in natural environment of Bangladesh. 3.5
 b) What are the protective measures of carp spawning grounds of Bangladesh. 3.5

11. a) Differentiate between exotic and invasive fish species. 2.0
 b) Write down the invasive characteristics and impact on ecosystem of any exotic fish species. 2.0
 c) Give a list of six (06) exotic carp species of Bangladesh mentioning common name, scientific name, origin and year of introduction. 3.0

12. a) Write about the organization which determine the five year plan of Bangladesh. 2.5
 b) Enlist the five years and two years plan of Bangladesh. 2.0
 c) Write down the objectives of sixth (6th) five year plan of Bangladesh in fisheries context. 2.5

What is non-piscine organisms? 2.0
 Write three scientific name of each important crustacean (Looster and Oyster) available in Bangladesh. 3.0
 What is seaweed? Write down the name of seaweed available in Bangladesh. 2.0