

**Chattogram Veterinary and Animal Sciences University, Chattogram**  
**Faculty of Fisheries**

B. Sc. Fisheries (Hons.) Year -2 Semester-1, Final Examination' 2019

Course No: FTE ~~201~~ (T), Course Title: Fishing Technology (Theory)

101 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) Write down the principles of fishing. Do you think these principles can ensure balanced population in open waterbodies? 4  
b) What do you know about artisanal and commercial fisheries of Bangladesh? 3
2. a) Briefly describe the selection of netting material used for bottom trawls. 4  
b) Prepare a list of major freshwater fisheries resources of Bangladesh. 3
3. a) What is MSBN? Write down the significance of MSBN. 2  
b) What is rotenone? Write down its uses and advantages in aquaculture. 4  
c) What do you know about UNCLOS? 1
4. a) Define EEZ. Write down the importance of EEZ in the economy of Bangladesh. 2  
b) Differentiate between float and buoy. 2  
c) Enlist common name and scientific name of commercially important pelagic and demersal fish (3 from each) available in the Bay of Bengal. 3
5. a) Define net preservation. What are the objectives of net preservation? 3  
b) Briefly describe net preservation technique using CuSO<sub>4</sub>. Write down its advantages and disadvantages. 4
6. a) Draw and label of a typical trawl net. 3  
b) Write down post-fishing activities on board vessel for commercial fishes in the Bay of Bengal. 4
7. a) Write a short note on EPIRB. 2  
b) Write down working principles of RADAR. 3  
c) What is FAD? Where it is used? 2

**Section B**

8. a) Illustrate different parts of a fishing trawler. 3  
b) Classify fishing gears according to the international classification and give an example from each category. 4
9. a) Define Tex, Denier and English Cotton Count System. 3  
b) Denote 210 Tex Z 120 × 2 S 250 × 3 Z 200 2  
c) Do you think numbering system of fishing twine is used by our fishermen? Justify. 2
0. a) What is knotless net? Do you think this type of net is suitable for fishing in the bottom water? Justify your answer. 3  
b) Write down the operation of a bottom trawl net. 3  
c) What is TED? 1
1. a) Differentiate between fish location and fish detection. 3  
b) Write an essay on two major fishing grounds in the Bay of Bengal. 4
2. a) How zone of divergence and convergence helps to locate fishing grounds? 2  
b) Briefly discuss fish detection methods. 3  
c) Mention the name of important appliances needed in a commercial fishing trawler. 2
3. a) Why mid water trawler is better than the bottom trawling? 2  
b) Explain the methods of pond draining to catch fish. 2  
c) Give a short note on trammel net. 3
4. a) Differentiate between active and passive gear. 2  
b) Discuss briefly about fabrication of fishing net. 3  
c) Mention the steps of designing fishing net. 2



**Chittagong Veterinary and Animal Sciences University, Chittagong**  
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B. Sc. Fisheries (Hons.) Year -1 Semester-1, Final Examination' 2019

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 mark. Use separate answer script for each section.*

**Section-A**

1. a) Illustrate the necessity of computer science for the fisheries graduates. 2  
b) Draw and describe the relation between CPU and storage unit. 3  
c) How did IC bring revolutionary changes in the history of computer? 2
2. a) Name three computer input and output devices. 2  
b) What are the different types of CPU registers in a typical operating system design? 2  
c) What is caching? What is the difference between MSI and .EXE file? 3
3. a) Discriminate among generations of computer in terms of software technology. 3  
b) Why do the primary memory is more expensive than the secondary memory? Explain. 2  
c) Define algorithm. List out the basic symbols of flowchart. 2
4. a) What is the difference between RAM and ROM? 3  
b) What would you check if there is no sound from your computer? 2  
c) If a computer is working really slow, what are the things you would check? 2
5. a) Explain the main purpose of an operating system. 3  
b) What are the advantages of a multiprocessor system? 2  
c) Give some benefits of multithreaded programming. 2
6. a) How does position affect the value in number system? Explain with example. 2  
b) Draw logic gate for the following function: 3  
i.  $(x'+y).(x+y)'$                       ii.  $(xy)'.(x+y)'$   
c) Differentiate between general purpose and special purpose register. 2
7. a) Define thread. How do the states of a process are connected? Draw the diagram. 2  
b) How does the high-level language overcome the limitations of machine language? Explain with example. 2  
c) Convert the digital signal  $(1101010)_2$  to analog signal by using AM, PM and FM techniques. 3

**Section B**

8. a) What are the layers in TCP/IP model? Describe each layer briefly. 3  
b) What is the difference between Hub, Switch and Router? 2  
c) Explain mesh network topology and brief its advantages. 2
9. a) What are the advantages of DBMS over traditional file systems? 2  
b) Distinguish between Data Definition Language(DDL) and Data Manipulation Language(DML)). 3  
c) Name four DBMS software. 2
10. a) Define network topology. Which topology is better in your perspective? Explain. 2  
b) Write down the role of MODEM in data communication. 2  
c) Suppose you want to calculate the sum all number in range 1 to 10. Write down the pseudocode to solve this problem. 3
11. a) Describe the role of PCB in process management. 2  
b) Define Boolean Algebra. Find the complement of the following expressions: 3  
i.  $(x+y).(xy)$                       ii.  $(x+y+z).(xyz)$   
c) Describe primary, foreign, candidate and super key with example. 2



12. a) Define Internet. Write down the basic services of internet. 2  
b) Describe frequency division multiplexing with proper figure. 2  
c) Compute 1's and 2's complement of the following numbers respectively: 3  
i.  $876_{10}$  ii.  $1001001_2$
13. a) What is WWW? Mention five names of web browser. 2  
b) Define SQL. Illustrate various types of database. 2  
c) Perform the following operations by mentioning all necessary steps: 3  
i.  $10101101/101$  ii.  $1010101-110101$
14. a) Describe all ways of virus detection and removal. 2  
b) Define data. Write down all stages of data processing. 2  
c) Suppose there are three process like  $P_1$ ,  $P_2$  and  $P_3$  and their burst time are 5,6 and 7 units respectively. 3  
All process arrives at time 0 and the execution starts at time 5. Now calculate turn around time and response time for each process.



**Chittagong Veterinary and Animal Sciences University, Chittagong**

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B. Sc. Fisheries (Hons.) Year -1 Semester-1, Final Examination' 2019

Course No: **FWE 101 (T)**, Course Title: **Freshwater Ecology (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 freshwater ecology. 1  
b) Differentiate between autecology and synecology. 3  
c) Describe the scope of ecology in fisheries. 3
2. a) Define ecosystem. 1  
b) Narrate the functions of an ecosystem. 4  
c) What do you mean by homeostasis of ecosystem? 2
3. a) Differentiate between decomposers and detritivores? 3  
b) How do you differentiate among individuals, species, population and community? 4
4. a) What do you mean by biotic community? 1  
b) Differentiate between primary succession and secondary succession. 3  
c) Summarize the characteristics of climax community. 3
5. a) How do nekton differs from neuston and benthic organisms? 3  
b) Compare the Liebig's law of the minimum with the Shelford's law of tolerance. 4
6. a) Which form of dispersion commonly found in nature and why? 3  
b) Compare between the population limiting factors. 4
7. a) Define habitat and ecological niche. 2  
b) Differentiate between lentic habitat and lotic habitat. 3  
c) What do you mean by thermal stratification in lakes? 2

**Section B**

8. a) Define different zones of a lentic habitat with diagram. 3  
b) How does ecological study help to protect environment? 4
9. a) Differentiate between rapid zone and pool zone. 3  
b) Explain the terms stenohaline and euryhaline with example. 4
10. a) Show the energy flow model in an ecosystem. 2  
b) Classify ecological pyramids with graphic representations. 5
11. a) What is ecotone and edge effect? 2  
b) How do you understand the climax condition of a community? 5
12. a) What do you know about primary and secondary production? 2  
b) Explain ecological principles associated with the Shelford's law of Tolerance. 5
13. a) What are the benefit of aggregation for a population? 2  
b) Explain the difference between i. protocooperation and mutualism; ii. parasitism and predation. 5
14. a) For which full expression of biotic potential of an organism restrict? 2  
b) How will you predict the fate of a population to see its different age classes? 5



**Chattogram Veterinary and Animal Sciences University, Chattogram**

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B. Sc. Fisheries (Hons.) Year -1 Semester-1, Final Examination' 2019

Course No: FZO-101 (T), Course Title: Fisheries Zoology (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 fish and fisheries zoology. 2  
b) 'Fish is a poikilothermic animal'- explain. 2  
c) Write down the applications of fisheries zoology in the practical field of fisheries. 3
2. a) Define sponge. Write its characteristics. 1  
b) Draw and label choanocyte cell. 1  
c) Describe in brief different canal systems of sponge. 3  
d) 'Sponges considered as animal instead of plant'-justify. 2
3. a) What are meant by cnidarians? 1  
b) How would you differentiate between polyp and medusa stage? 2  
c) Describe the life cycle of Jellyfish. 4
4. a) Why arthropods are considered as most diversified phylum in animal kingdom? 2  
b) Draw a labelled diagram of giant tiger prawn (*Macrobrachium rosenbergii*). 3  
c) Write the functions of coxal gland and hepatopancreas. 2
5. a) Point out the general characters of Oligochaeta. 2  
b) What are the functions of phasmid and clitellum? 2  
c) 'Animals can be categorized on the basis of their body symmetry'- explain. 3
6. a) Draw a labelled diagram of typical protozoa. 2  
b) What is the significance of encystment in protozoan life cycle. 2  
c) Classify Amphibia with characteristics. 3
7. a) Classify the phylum Mollusca with examples. 2  
b) Write the similarities and dissimilarities of *Loligo* and *Sepia*. 2  
c) Write at least two identifying characters with example of the following classes: i) Aplousophora; ii) Bivalvia; iii) Cephalopoda. 3

**Section B**

8. a) What is aquatic adaptation? 1  
b) Write the economic significance of crustaceans. 2  
c) Discuss the osmoregulation process of marine fish with appropriate figure. 4
9. a) Define Urochordata. Write its classification with characters. 3  
b) 'All vertebrates are chordates but all chordates are not vertebrates'-justify with example. 4
10. a) Make a comparison between shrimp and prawn. 2  
b) What is meant by metamorphosis? 1  
c) Illustrate the life cycle of frog. 4
11. a) What is Crustacea? Write the characteristics of Crustacea. 3  
b) 'Crustacea plays an important role in fisheries and aquaculture'- justify. 4
12. a) Illustrate the morphological differences between turtle and tortoise. 2  
b) How does temperature determine the gender of sea turtle? 2  
c) 'Sea turtle maintain the ecological balance in oceanic habitat'-explain. 3



13. a) Define Reptilia. 1  
b) Draw a typical body plan of alligator. 2  
c) Illustrate the lif cycle of *Crocodilus palustris*. 4
14. Write down short notes on any **02 (Two)** of the following: 3.5 × 2 = 7  
i) Glochidium; ii) Hermaphrodite; iii) Porifera; iv) Flagellates.



**Chittagong Veterinary and Animal Sciences University, Chittagong**

**Faculty of Fisheries**

B. Sc. Fisheries (Hons.) Year -1 Semester-1, Final Examination' 2019

Course No: **FRS 101 (T)**, Course Title: **Fisheries Resources (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 resources. 1  
b) Point out the three main characteristics of resources. 2  
c) Write down the present status of fisheries resources of Bangladesh. 4
2. a) Differentiate between renewable and non renewable resources 2  
b) How river can bring prosperity for human? 3  
c) "Fossil fuel is called biotic resource"- Justify this statement. 2
3. a) Enlist the organizations involved in the fisheries sector of Bangladesh. 2  
b) What are the aims and objectives of BFRI? 3  
c) Write down the mandate of DoF. 2
4. a) What do you mean by 'Jatka'? 2  
b) Write down the on-going management measures taken by GoB for the conservation of hilsa. 4  
c) Is hilsa a diadromous fish? 1
5. a) Compare indigenous and exotic species? 2  
b) What are the objectives of introducing exotic fish species in Bangladesh? 4  
c) What do you mean by Indian major carps? 1
6. a) Why haor is called freshwater sea? 2  
b) Write down the important role of "Tanguar haor" in fisheries sector. 3  
c) Mention the ongoing threats of haor areas of Bangladesh. 2
7. a) Define non piscine fishery resources. 2  
b) Enlist 5 harvested shrimp species in Bangladesh with their scientific name. 3  
c) Discuss the significance of non piscine fishery resources to boosting the economy of Bangladesh 2

**Section B**

8. a) Define SIS. 1  
b) Briefly discuss the importance of SIS in context of Bangladesh. 3  
c) Write down the reasons responsible for the degradation of SIS biodiversity in Bangladesh. 3
9. a) What do you mean by recreational fisheries? 1  
b) What are the different ways of recreational use of waterbodies? 3  
c) Write down the recreational fisheries resources of Bangladesh. 3
10. a) Enlist local name, scientific name and country of origin of any six exotic fish of Bangladesh. 3  
b) Write down the probable impacts of introduction of an exotic fish on the aquatic food web. 4
11. a) Define seaweed. 1  
b) Describe about the structure of seaweed with its appropriate figure. 3  
c) Write down the potentiality of seaweed culture practice in present context of Bangladesh. 3
12. a) Differentiate among 3 types of hilsa found in Bangladesh. 2  
b) "Riverine hilsa is tastier than marine one"- Justify. 2  
c) Describe the economic significance of hilsa fishery in Bangladesh. 3
13. a) Why Halda river is called natural and pure gene bank? 2  
b) Mention the present significant problem of reduction of IMCs seed collection from the halda river. 2  
c) How will you restore natural breeding grounds of IMCs in the Halda river? 3
14. a) List down some Non-Government Organizations work in Bangladesh. 2  
b) Give a schematic diagram for money flow through financial institutions. 3  
c) "Cooperative act as an autonomous organization"- Justify this statement. 2



**Chattogram Veterinary and Animal Sciences University, Chattogram**

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**B. Sc. Fisheries (Hons.) Year -1 Semester-1, Final Examination' 2019**

**Course Title: Biochemistry (Theory); Course Code: BCH-101 (T)**

**Total Marks: 70, Time: 3 hours**

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

**Section-A**

1. a) Define protein. Classify protein on the basis of solubility. 2.0  
b) Briefly discuss secondary and tertiary structure of protein. 3.0  
c) Explain iso-electric pH of protein. How can you determine N-terminal residue of protein? 3.0  
d) What do you mean by bio-molecules? Illustrate the macromolecules of animal body along with their constituents and roles in the body. 3.0
2. a) How body Physiology compensate glucose if anybody starve for couple of days? Explain glucose formation from any glucogenic amino acids. 4.0  
b) How ammonia is excreted from fish body? Construct relationship between ornithine cycle and kreb's cycle. 4.0  
c) Describe briefly about catabolic pathways of protein (any three) along with examples. 4.0
3. a) Give example of  $\omega 3$ ,  $\omega 6$  and poly unsaturated fatty acid with their structures. Write their importance in fish industries. 3.0  
b) Compare fish oil with beef fat. Define arteriosclerosis. How can fish oil contribute in reducing arteriosclerosis? 3.0  
c) Proof that  $\beta$ -oxidation takes place in your body. 3.0  
d) Explain saponification number, Iodine value and RM value. 3.0
4. Write short notes (any three) 3X4= 12  
a) Amino acid pool  
b) Translation  
c) Starch and glycogen  
d) Mechanism of action of protein hormone

**Section B**

5. a) Define proof reading activity. Summarize replication process. 4.0  
b) Genetic materials can transfer from one bacterial strain to other- proof and explain. 4.0  
c) Show genetic code and anticodon for following nucleotide sequence: CGAUGAGUUCAC. 3.0
6. a) Show a reaction of glycolysis where ATP is produced. Write the name of enzyme with its inhibitors and activators. 3.0  
b) Give the reactions of TCA cycle where  $CO_2$  are produced. 3.0  
c) How glucose is converted to ribose in fish. 3.0  
d) Sketch out malate aspartate shuttle and electron transport chain. 3.0
7. a) Give example of bioluminescence in aquatic animals. Explain entropy and enthalpy. 4.0  
b) List the names of hormone produced from pituitary gland. Write their mode of action and biological functions. 4.0  
c) Write the name of steroid hormone with their function. 4.0
8. Write short notes (any three) 3X4= 12  
a) Protein denaturation  
b) Ammonia toxicity  
c) Cori's cycle  
d) Feedback inhibition of enzyme



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|-----|----|--|-----|
| 11. | a. | Define packaging. What are the major functions of packaging?   | 1.0 |
|     | b. | What is IQF? How IQF products are packed? Write down the properties of an ideal fish package.  | 2.0 |
|     | c. | What are the usages of irradiation in food preservation? Define commercial sterility.  | 1.0 |
|     | d. | Compare vacuum packaging, controlled atmosphere packaging and modified atmosphere packaging as a means of shelf life extension of fish.  | 3.0 |
| 12. | a. | What is the generation time of bacteria and name the five spoilage bacteria in fish.   | 2.5 |
|     | b. | Mention the names of different methods of chilling.  | 1.5 |
|     | c. | What is glazing and how it is done in fish?  | 3.0 |
| 13. | a. | Write down the different methods and importance of washing and grading of fishes during preservation.  | 3.0 |
|     | b. | What is sensory quality assessment table for sorting and grading?  | 2.5 |
|     | c. | Mention the role of temperature during preservation.   | 1.5 |
| 14. | a. | Write down the prospects of live fish transportation. Briefly describe the methods of live fish transportation.  | 3.0 |
|     | b. | List down the factors associated with successful transportation of live fish and describe any two important factors.   | 3.0 |
|     | c. | Consider that you have the following stocks- fatty fish (sardine/salmon), lean fish (cod/haddock), flatfish (flounder), and crustaceans (lobster/ shrimp). You have three frozen storage facilities (-18°C, -25°C and -30°C). Which storage facility will provide maximum storage life and which one will be more economical? Justify your answer. Which particular stock will have longer storage life? | 1.0 |



Chittagong Veterinary and Animal Sciences University, Chittagong  
Faculty of Fisheries

B.Sc. Fisheries (Hons.) Year -01, Semester-02, Final Examination' 2014  
Course No & Title: CSC-102(T); Computer Science (Theory)  
Total Marks: 70, Time: 3 hour

Answer any 04 (four) questions from each section where question 1 and 6 are compulsory. *The figures in the right margin indicate full mark.*

**Section-A**

1. a) What are the basic differences between CISC and RISC? 2  
b) What are the uses of secondary storage in a computer system? 1.5  
c) Distinguish between hardware and software. 1.5
2. a) What is digital computer? Briefly explain the data processing cycle of computer system. 5  
b) What is meant by computer generation? Write short note on super computer. 5
3. a) Calculate the difference: i) 1100101001-110110110 4  
ii) 1010-1011  
b) Add the following numbers: 2  
100101 and 10100  
c) What do you mean by BCD and Unicode? 4
4. a) What are I/O devices? List common I/O devices. 2  
b) Explain how data is stored on the surface of magnetic and optical disks. 5  
c) Write the characteristics of address bus and control bus. 3
5. a) What do you mean by operating system? Discuss the major functions of DOS operating system (OS). 5  
b) Write the advantages of WINDOWS. 3  
c) What do you understand by multi-user operating system? Give examples. 2

**Section-B**

6. a) Convert the Binary from  $127_{(10)}$  2.5  
b) Convert the following octal number to hexadecimal equivalent. 2.5  
 $7025_{(8)}$
7. a) What is network topology? Describe two basic topologies. 4  
b) What do you understand by computer networks? List some common uses of computer networks. 3.5  
c) Describe the general characteristics of LAN. 2.5
8. a) Define computer virus and antivirus. 3  
b) What do you mean by Database management system? Write two reasons why need data normalization. 5  
c) Write the name of some popular web browser. 2
9. a) What is disk formatting and file defragmentation. 3  
b) State the salient features of CRT, LCD and LED monitor. 3  
c) A printer is said to have a resolution of 600dpi; what does this mean? 4
10. a) What is a search engine? List three names of popular search engine. 2.5  
b) Write short notes on E-mail. 2.5  
c) What is a modem? Explain how two distant computers can communicate through telephone line using modems. 5