

Chittagong Veterinary and Animal Sciences University, Chittagong
B. Sc. Fisheries (Hons.) Year -01 Semester-01, Final Examination' 2018
Course No: 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) What is computer? Write down the importance of computer. 3
- 1(b) Draw the basic organization of computer system. 2
- 1(c) Differentiate between microcomputer and minicomputer. 2
- 2(a) Convert the followings: 3
- i. $(101.10)_{10} = (?)_2$
- ii. $(ABC.EF)_{16} = (?)_{10}$
- iii. $(3845.16)_8 = (?)_{10}$
- 2(b) Evaluate: 3
- i. $10010 - 11011$
- ii. $11110111 / 1001$
- iii. 11110111×1001
- 2(c) Define bit and bytes. 1
- 3(a) Differentiate between compiler and interpreter. 2
- 3(b) Describe the role of cache memory in computer processing speed. 2
- 3(c) Discuss about the major components of a microcomputer. 3
- 4(a) Define CPU. Narrate five basic operation of computer with example. 3
- 4(b) What is processor? Differentiate between CISC and RISC processor. 2
- 4(c) Write short notes on the following (any two): 2
- i. Adapter
- ii. Processor
- iii. Power supply
- 5(a) Define I/O device. Give four examples of each. 3
- 5(b) "Virus is a program". Do you agree with this statement? Explain your justification. 2
- 5(c) List down all the sources from where your computer can be affected by virus. 2
- 6(a) What is Internet? Mention all the basic services of Internet. 2
- 6(b) Write short notes on memory hierarchy. 2

- 6(c) List down all the rules that need to follow to draw flowchart. 3
- 7(a) What do you mean by application software? 2
- 7(b) Suppose there are three process P_1, P_2, P_3 in your system and each process need 5,4,6 unit time respectively. All process arrive at time 0 and system start execution of first process at time 7. Now calculate response time, turn around time and throughput of the system. 3
- 7(c) Draw the process state diagram for time sharing system. 2

Section-B

- 8(a) Define hardware. Describe various types of software with example. 3
- 8(b) What are the functions that an operating system can do? 2
- 8(c) Name the different types of operating system. 2
- 9(a) Write the activities of database management system. 2
- 9(b) Define field and record of DBMS with example. 2
- 9(c) Define protocol. Draw the mesh topology with 5 computers. 3
- 10(a) Define peripheral device. List down 5 peripheral devices. 3
- 10(b) Differentiate between CLI and GUI. 2
- 10(c) Briefly describe memory evaluation criteria with proper table. 2
- 11(a) Convert digital signal $(11010110)_2$ to analog signal using AM, FM and PM. 3
- 11(b) List some common uses of computer networks. 2
- 11(c) Discuss about network topology.. 2
- 12(a) What is electronic mail? Mention three names of e-mail programs. 2
- 12(b) What is the relation between Internet and Intranet? 2
- 12(c) What do you mean by Internet address? 1
- 12(d) Differentiate between wifi and wimax network. 2
- 13(a) Write down all software development steps. 2
- 13(b) Describe the classification of computer based on capacity. 3
- 13(c) Differentiate between machine language and high level language. 2
- 14(a) What is modem? Describe data transmission mode with example. 2
- 14(b) Define multiplexing. Draw the figure of time division multiplexing. 2
- 14(c) Write the full name of the term: EEPROM, HTTP and DRAM. 3

Chittagong Veterinary and Animal Sciences University, Chittagong
Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year -01 Semester-01, Final Examination' 2018

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

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| 1. a) Define ecology. | 1 |
| b) Write down the origin and scope of ecology. | 4 |
| c) What do mean by freshwater ecology? | 2 |
| 2. a) Define ecosystem. | 1 |
| b) What are the functions of an ecosystem? | 3 |
| c) "Fish pond is an ecosystem"- explain. | 3 |
| 3. a) How does Y shaped ecosystem form in an ecosystem? | 3 |
| b) Show the relationship of trophic level, food chain and food web. | 4 |
| 4. a) Differentiate among nekton, neuston and benthos. | 2 |
| b) Briefly describe the zonation of freshwater aquatic system. | 5 |
| 5. a) Define food chain and food web. | 2 |
| b) What do you mean by trophic level and ecological pyramid? | 2 |
| c) Discuss different types of ecological pyramids. | 3 |
| 6. a) Explain the terms "steno" and "eury" in ecology with examples. | 3 |
| b) Explain the Leibig's law of the minimum. | 4 |
| 7. Write short notes on any two of the following: | 3.5x2=7 |
| a) Population interaction b) Population growth forms c) Habitat and ecological niche | |

Section B

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|---|---------|
| 8. a) Differentiate between detrivores and decomposers. | 2 |
| b) 'Energy flow in an ecosystem is always linear' – explain. | 5 |
| 9. a) What are the relationship among individuals, species, population and community? | 2 |
| b) Draw an ideal ecosystem showing its components. | 5 |
| 10. a) What are the different patterns of population dispersion? Give reasons behind each case. | 2 |
| b) What are the different forms of population dispersal? | 5 |
| 11. a) Write down the difference between lake and pond. | 2 |
| b) How do freshwater lotic organisms adapt with prevailing condition? | 5 |
| 12. a) Define ecological succession. | 1 |
| b) Describe the chronological steps of an ecological succession. | 4 |
| c) Explain homeostasis with an example in a waterbody. | 2 |
| 13. a) Calculate the net primary productivity when gross primary productivity and respiration are 20 and 10 ppm respectively. | 3 |
| b) Expalin Shelford's law of tolerance. | 4 |
| 14. Write short notes on any two of the following: | 3.5x2=7 |
| a) Population age distribution b) Allee's principle c) Types of limiting factors | |

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year -01 Semester-01, Final Examination' 2018

Course No: **101 (T)**, Course Title: **Fish 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 fish, fisheries and fisheries resource. 3
b) Describe the significance of fisheries resource for enhancement of the economy of Bangladesh. 4
2. a) Fossil fuel is called non-renewable resource - explain the statement. 2
b) Mention the physical boundary of the Bay of Bengal. 2
c) List English names and scientific names of six commercial finfish species of the Bay of Bengal. 3
3. a) Why floodplains are important to aquatic ecosystem function? 2
b) Distinguish among *Haor*, *Baor* and *Beel*. 3
c) Differentiate between Major carps and Minor carps. 2
4. a) Define SIS. 1
b) Enlist the major SIS found in Bangladesh. 3
c) Write down the importance of SIS. 3
5. a) What are the important organizations involved in fisheries sector of Bangladesh? 2
b) What are the aims and objectives of DoF? 3
c) Describe the functions of BFDC. 2
6. a) Why Hilsha fishery is called a single species fishery? 1
b) Mention the Hilsha sanctuaries of Bangladesh. 2
c) Describe the contribution of Hilsha fishery in the economy of Bangladesh. 4
7. Write short notes on **any two** of the following: 3.5x2=7
a) Major river systems of Bangladesh involvement in Bangladesh
b) Crustacean fishery
c) GOs, NGOs and Donors

Section B

8. a) What is meant by recreation? 1
b) "Recreation has the capability to build confidence"- explain the statement. 2
c) Describe the recreational uses of aquatic resources of Bangladesh. 4
9. a) What do you know about exotic and invasive species? 2
b) Enlist five exotic fishes in Bangladesh with their scientific names, common names and countries of origin. 3
c) What are the main purposes of introducing exotic species for aquaculture development in Bangladesh? 2
10. a) What do you mean by non-piscine fishery resources? 1
b) Name four culturable species of mollusc available in Bangladesh. 2
c) Write down the scope of bivalve mollusc fishery in Bangladesh. 4
11. a) What is seaweed? 1
b) Write down the scientific and common names of seaweed available in Bangladesh. 2
c) Mention the importance of seaweed culture with some potential locations in Bangladesh. 4
12. a) How fish seeds are collected from natural source? 3
b) What are the potential causes of reduction of Indian Major Carp egg collection from the Halda river? 4
13. a) Why the taste of Hilsha varies from marine to freshwater environment? 2
b) Give an example of anadromous fish and why it is called so? 2
c) Describe the migration pattern of Hilsha. 3
14. Write short notes on **any two** of the following: 3.5x2=7
a) Artificial seed production
b) Tanguar haor
c) Restoration of natural breeding ground of IMCs

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B. Sc. Fisheries (Hons.), Year -01, Semester-01, Final Examination' 2018

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 pelagic, demersal and shellfish and give two examples of each. 2
b) Do you think fisheries resource is a "renewable resource"? Justify. 2
c) Explain how the principles of fishing can be implemented to maintain sustainable catch. 3
2. a) Write down the factors generally responsible for selecting netting materials for fishing gears. 2
b) "Use of explosives in fishing is prohibited"-why? 2
c) Classify "gill net" and "hook and line" according to FAO. 3
3. a) Differentiate between trawling and trolling. 2
b) Write down the mode of action of rotenone on fish. 2
c) Is it possible that trammel net is made of only two walls instead of three? Cite reasons in favour of your answer. 3
4. a) Explain why nylon is considered as an ideal fish net fibre? 3
b) Illustrate different parts of a bottom fish trawler. 4
5. a) Do you think it is possible to predict future fish movement to an area? How and on what basis can it be done? 3
b) What is fish attraction? What is your opinion regarding the most effective stimuli in attracting fish? Justify. 4
6. a) Write down the trade name and chemical name of 5 synthetic fibres. 2
b) "RADAR is called the third eye of fisherman"-justify the statement. 2
c) Illustrate the working principle of GMDSS. 3
7. a) What is EPIRB? Differentiate between float and sinker. 3
b) Draw and label a typical purse seine net. 4

Section B

8. a) Define "ghost fishing". What are its implications upon marine environment? Suggest its mitigating measures. 3
b) Write down the names, their depth, location and major fish species available in the commercial fishing grounds in Bangladesh EEZ. 4
9. a) Briefly describe the steps of post-fishing activities on board a trawler. 3
b) Name the commercial fishing methods used in the Bay of Bengal. Briefly describe any one of them. 4
10. a) Differentiate between ESNB and MSBN. Write down the operation of ESNB in Bangladesh. 2+3
b) What is by-catch? Name some methods of reducing by-catch in a shrimp trawler. 2
11. a) Enlist the factors responsible for determining the efficiency of fishing gears. 2
b) Briefly describe the operational procedure of SONAR. 3
c) Enumerate tannin preservation with its pros and cons. 2
12. a) Schematically show the denotation for 30 Tex and 500 Tex S 250×5 S 100×4 S 50 3
b) Briefly describe the main features of "The Protection and Conservation Act, 1950". 4
13. a) Define mesh and mesh size. 2
b) Differentiate between knotted and knotless net. 2
c) Do you think it is possible to measure mesh size of a knotless net? How? 3
14. a) Briefly describe the factors used to locate fishing grounds. 4
b) What is FAD? Write down its working principles. 3

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B. Sc. Fisheries (Hons.) Year -01 Semester-01, Final Examination' 2018

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

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| 1. a) What do you mean by fisheries zoology? | 2 |
| b) "Classification of organisms is important" prove your answer with justification. | 2 |
| c) Classify animals according to their level of organization. | 3 |
| 2. a) What is meant by Protozoa? | 1 |
| b) Classify Protozoa with two examples from each group. | 2 |
| c) Illustrate the life cycle of a protozoan that causes fish diseases. | 4 |
| 3. a) What is metamerism? | 1 |
| b) Write down the functions of clitellum and sucker. | 2 |
| c) Point out the general characters of Plathelminthes. | 4 |
| 4. a) What do you understand by Cetacean and Melon? | 2 |
| b) Dolphins are mammals or not- give your statement with justification. | 3 |
| c) Briefly describe the reproduction process of Dolphin. | 2 |
| 5. a) Define Annelida. Enlist various important characters of Annelida. | 3 |
| b) Distinguish between Polychaete and Oligochaete with figures. | 4 |
| 6. a) What do you know about radula and mantle? | 2 |
| b) Differentiate between gastropods and cephalopods. | 2 |
| c) "All mollusks have open circulatory system"- is the statement true? Explain your answer. | 3 |
| 7. Distinguish between the following pair of terms: | 3.5×2=7.0 |
| a) Prawn and shrimp; b) Sea anemone and sea star. | |

Section B

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| 8. a) What do you know about choanocyte and spongocoel? | 2 |
| b) Categorize the animals belonging to the phylum Porifera on the basis of their skeleton. | 4 |
| c) Write down the significance of Porifera. | 1 |
| 9. a) What is nematocyst? | 1 |
| b) "Polymorphism is common in cnidarians"- explain this statement. | 2 |
| c) Describe the life cycle of a Jellyfish. | 4 |
| 10. a) Define Chordata. Write its classification with characters. | 3.5 |
| b) "All vertebrates are chordates but all chordates are not vertebrates"-justify the statement with example. | 3.5 |
| 11. a) Draw and label external morphology of a crustacean. | 3 |
| b) How will you differentiate a male crab from a female? | 2 |
| c) Write down the economic significance of crustaceans. | 2 |
| 12. a) What do you mean by reptile? Write its key characters. | 2 |
| b) Write down the differences between crocodile and alligator. | 2 |
| c) Discuss the global economic significance of reptiles. | 3 |
| 13. a) What do you mean by adaptation? Why it is needed for animals? | 2 |
| b) Differentiate between behavioral and functional adaptation. | 2 |
| c) How do fish adapt themselves in temperature fluctuations? | 3 |
| 14. Write short note on any 02(Two) of the followings: | 3.5×2=7.0 |
| a) Portuguese man-of-war; b) Crocodile; c) Water vascular system of <i>Asterias</i> . | |

Chittagong Veterinary and Animal Sciences University, Chittagong
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B. Sc. Fisheries (Hons.) Year -01 Semester-01, Final Examination' 2018

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

Total Marks: 70, Time: 3 hours

*Answer any **three (3)** questions from each section where question no 1 and 5 are compulsory. Figures in the right margin indicate full mark. Use separate answer script for each section. Split answer is discouraged.*

Section-A

1. a) Define carbohydrate. Prove that the carbohydrate may be classified based on i. number of carbon; ii. Number of sugar unit; and iii. Presence of aldehyde and ketone group. 2
b) Describe epimers. How do they guide the structures of carbohydrate? 2
c) State on the homopolysaccharide and heteropolysaccharide. How chitin and dextrans are formed through the polymerization of sugar/sugar derivatives? 3
d) How could a linear structure of carbohydrate be converted to ring structure? Write down the structure of the following: i. α -D-glucopyranosyl β -D-glucopyranoside; ii. β -D-fructofuranosyl α -D-glucopyranose; iii. β -D-galactopyranosyl -(1-4) α -D-glucopyranose 1+3
2. a) Explain that amino acids are the structural and functional unit of protein. How do amino acids lead to form protein? 2
b) Write down the structures of the amino acids containing the following groups: 4
i. Thiol group; ii. Indole group; iii. Amide group and iv. Phenolic group
c) Explain essential and non-essential amino acids. Why are they called so? 3
d) "Show that amino acids are less acidic than most carboxylic acids and less basic than most amines"- justify. 3
3. a) Elucidate the fate of glucose in the fish body, its absorption, transport, uptake by cells and its role in metabolic pathways of other nutrients. 3
b) Describe the irreversible reactions in glycolysis pathway. 3
c) Mention the name of reagents-usually utilizes for the identification of N-terminal residue from a protein molecule. 3
d) Describe the biologically important peptides that regulate body's (important) key functions. 3
4. a) Differentiate between aerobic and anaerobic glycolysis. Describe the fate of glucose in anaerobic condition. 3
b) Diagrammatically show the conversion of the products of Urea cycle. Explain "phenyl ketone Urea" and "ketoacidosis". 3
c) Explain the involvement of carnitine in the β oxidation of fatty acids with necessary diagram. 3
d) Outline one mechanism by which the electrons in NADH formed during the oxidation of glyceraldehyde-3-P in the cytoplasm enter the electron transport chain in the mitochondrial inner membrane. 3

Section B

5. a) Why does DNA replicate in the 5 to 3 direction? 2
- b) What is the purpose of replication? What is involved in DNA replication. 1+2
- c) Differentiate between an intron and exon? 2
- d) What are the stages of translation? What are the importance of translation in hereditary? Describe the role of codon order in translation dynamics. 4
6. a) Enlist the hormones released from adenohipophysis. 3
- b) Does enzyme act better under acidic or alkaline pHs? Since pepsin is a gastric enzyme, does it have an acidic or alkaline optimum pH? 3
- c) Enzymes are specific to substrate-justify this statement. 3
- d) Mention the role of vitamin in different coenzyme synthesis. 3
7. a) What are the fates of pyruvate under different condition? 3
- b) Describe the role of carnitine in fatty acid oxidation. 3
- c) Fatty acid biosynthesis and fatty acid degradation are two important phenomena in lipid metabolism- describe the enzymes and coenzymes in those processes. 3
- d) Differentiate the following term: 3
- (i) Saturated and unsaturated fatty acid
- (ii) Beta oxidation and alpha oxidation
8. a) Define rancidity. Describe the microbial rancidity with its significance. 3
- b) Summarizes the digestive enzymes that released from fish digestive tract with its function. 3
- c) Describe the importance of antifreeze protein genes for the production of cold resistant fish variety in aquaculture. 3
- d) What are steroids? What are some examples of steroids with their specific biological function. 3

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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