

Chittagong Veterinary and Animal Sciences University, Chittagong
Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year-01, Semester 01, Final Examination' 2016

Course code: FWA-101(T); Course Title: Freshwater Aquaculture (Theory)

Total Marks: 70, Time: 3 hours

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

Section-A

1. a) Define Aquaculture. 2.0
b) What is the aim of pond Aquaculture? 2.0
c) Describe the present status of pond culture in Bangladesh. 3.0
2. a) What are the criteria for selection of suitable site for pond culture? 3.0
b) Describe the different steps required for pond preparation before fry stocking. 4.0
3. a) What is the necessity to control aquatic weeds in pond? 2.0
b) How will you control the unwanted vegetation of aquatic weeds in pond? 5.0
4. a) What are the causes of fish mortality during transportation? 2.0
b) Why conditioning of fish is necessary during transportation? 2.0
c) Write down the advantages and disadvantages of different methods of fish transportation. 3.0
5. a) Why pangas culture is popular in Bangladesh? 2.0
b) What do you know about pangas farming in Bangladesh?. 5.0
6. a) Write down the advantages of cage culture. 2.0
b) Mention some freshwater fishes used for cage culture. 1.0
c) Discuss the cage culture practices in Bangladesh. 4.0
7. Write short note on any **02 (two)** of the following: 3.5×2.0=7.0
a) SIS culture in Bangladesh,
b) Difference between extensive and intensive system, and
c) Primary productivity

Section-B

8. a) Give a list of some commercially important carp species of Bangladesh. 2.0
b) What do you know about carp polyculture in Bangladesh? 5.0
9. a) What is algal bloom? 2.0
b) What are the causes of harmful algal blooms? 2.0
c) How will you control harmful algal blooms? 3.0
10. a) What is the necessity of nursery pond in aquaculture? 2.0
b) How will you manage a nursery pond after preparation? 5.0
11. a) What is the importance of anesthetics in aquaculture? 2.0
b) Mention some common anesthetics used in aquaculture. 2.0
c) How fish can be recovered after using of anesthetic agents? 3.0
12. a) What are the components of an ideal hatchery? 3.0
b) Mention the merits and demerits of wild fry. 2.0
c) Compare bundh spawning and induced spawning. 2.0
13. a) What are the advantages of hatchery fry? 2.0
b) Describe the operation and management of fry rearing in a commercial hatchery. 5.0
14. Write short note on **02 (two)** of the following: 3.5×2.0=7.0
a) Biofouling,
b) Antiseptics and antibiotics, and
c) Composite fish culture



Chittagong Veterinary and Animal Sciences University, Chittagong
Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year-01 Semester-01, Final Examination' 2016

Course code: 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 margin indicate full mark. Use separate answer script for each section.

Section-A

1. a) Define fish and fisheries zoology. 2.0
b) Write down the importance of studying fisheries zoology. 3.0
c) Distinguish between vertebrates and invertebrates. 2.0
2. a) What do Protozoa mean? 1.0
b) Classify Protozoans on the basis of locomotion with examples. 4.0
c) Mention four diseases caused by Apicomplexan Protozoa with their causative agents. 2.0
3. a) What do you know about Porifera? 1.0
b) What are the general features of Porifera? 3.0
c) Briefly explain about choanocytes. 3.0
4. a) What is the advancement of phylum chordate over other phyla? 3.0
b) Differentiate between arcania and craniata. 2.0
c) Draw a labeled diagram of polyp and medusa phase of Cnidarians. 2.0
5. a) Classify Dolphin upto genus level. 2.0
b) How does dolphin communicate with each other? 1.0
c) Briefly describe the life cycle of dolphin. 4.0
6. a) Define adaptation. 2.0
b) Briefly describe the adaptational changes of aquatic organisms in respect to salinity and light. 5.0
7. a) What do you know about hibernation and aestivation? 2.0
b) Briefly discuss the life cycle of a frog. 5.0

Section-B

8. a) What do you mean by hermaphroditism, oviparous and viviparous? 3.0
b) What are the distinguishable characters of platyhelminthes? 2.0
c) Write down the differences between trematoda and cestoda. 2.0
9. a) Write down the habitat and distribution of crocodile. 2.0
b) Briefly describe the life cycle of crocodile. 5.0
10. a) What do you mean by Molluscs? 1.0
b) Classify Mollusca with examples from each class. 3.0
c) Write down the economic significance of Molluscs. 3.0
11. a) Draw a labeled diagram of *Macrobrachium rosenbergii*. 2.0
b) Illustrate the differences between *Loligo* and *Octopus*. 3.0
c) Give taxonomic classification of *Octopus*. 2.0
12. a) Write down the taxonomy of a mud crab. 2.0
b) How will you differentiate a male mud crab from a female one? 4.0
c) What do you know about the economic significance of mud crab. 1.0
13. a) Classify *Paramecium* upto species level. 2.0
b) Write down the feeding mechanism of *Paramecium*. 4.0
c) Write down 4 economic significances of *Paramecium*.
14. Write short notes on **any 02 (two)** of the followings: 3.5×2=7.0
 - a) Functional adaptation,
 - b) Amphibia,
 - c) Reptiles, and
 - d) Turtle and tortoise.

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year – 01 Semester – 01, Final Examination 2016

Course No: 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 and fishery. 2.0
b) Write down the principle of fishing. 2.0
c) What are the necessities of studying 'Fishing Technology' to manage Hilsha fishery? 3.0
2. a) What do you mean by UNCLOS and ITLOS? 2.0
b) Why rotenone is used to kill fish? 2.0
c) Write short notes on (i) Electrofishing and (ii) Multi-walled gill net. 3.0
3. a) Draw and label different parts of a trawl net. 2.5
b) Why mid water trawling is better than bottom trawling? 2.0
c) "Trawl net acts as active and passive gear"- justify. 2.5
4. a) Briefly discuss the important properties of synthetic fibers. 2.0
b) What are the selection criteria of netting materials for fishing gears? 2.0
c) Enlist the factors that are related to efficiency of fishing gear. 2.0
d) What is yarn? 1.0
5. a) Define fishing act. 1.0
b) Briefly describe the main features of 'East Bengal protection and Conservation of fish act-1950'. 4.0
c) Why current jal is prohibited? 2.0
6. a) What is TED? Why TED is important for biodiversity conservation? 3.0
b) Write down post fishing activities on board vessel for commercial fishes in the Bay of Bengal. 4.0
7. a) What do you mean by fishing ground? 2.0
b) Which surveys were undertaken from 1958 to 1985 by national and international agencies to estimate the resources and potential of the Bay of Bengal? 3.0
c) Enlist major fishing grounds in the Bay of Bengal with their location. 2.0

Section-B

8. a) What do you mean by responsible fishing? 1.0
b) When a fishing vessel can enter into the Bangladesh water without lisenche? 2.0
c) Enlist the prohibited fishing methods according to 'Marine Fisheries Ordinance -1983'. 2.0
d) As an authorized officer which power you can exercise to enforce the provision of the ordinance? 2.0
9. a) What do you mean by GMDSS? 1.0
b) Write short notes on (i) EPIRB and (ii) Ghost fishing. 3.0
c) What should be the potential technological aspects of maritime safety issues to combat fishing trawler hijacking and pirates in the Bay of Bengal? 3.0
10. a) Differentiate between purse seine and beach seine net. 2.0
b) Explain the methods of pond draining to catch fish. 2.5
c) What is FAD? Write down working principle of FAD. 2.5
11. a) What are the objectives of net preservation? 2.0
b) Discuss tannin preservation with its advantages and disadvantages. 3.0
c) What are the cautions should be taken during net preservation by CuSO_4 ? 2.0
12. a) Compare between float and sinker. 1.0
b) Briefly discuss about net fabrication. 3.0
c) What are the steps of designing a fishing net? 2.0
d) What do you mean by 30 Tex? 1.0
13. a) Differentiate between (i) active gear and passive gear (ii) trawling and trolling 4.0
b) Briefly describe international classification of fish trawlers and seiners. 3.0
14. a) What are the basic differences between fish location and fish detection? 2.0
b) Why SONAR is called third eye of fisherman? Briefly describe working principle of SONAR? 3.0
c) What are the relation of convergence and divergence with fish location? 2.0

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year – 01 Semester – 01, Final Examination 2016

Course No: **FWE-101 (T)**, Course Title: **Freshwater Ecology (Theory)**

Total Marks: 70, Time: 3 hours

*Answer any **05 (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 ecology and freshwater ecology. 2.0
b) Explain synecology with example. 2.0
c) Write down scope of ecology. 3.0
2. a) Differentiate between population and community. 2.0
b) What are the functions of ecosystem? 2.0
c) Briefly describe ecological pyramid. 3.0
3. a) Define limiting factor with examples. 1.0
b) Explain Liebig's law of minimum. 3.0
c) Write down the ecological principles associated with "Law of Tolerance". 3.0
4. a) What do you mean by ecological succession? 1.0
b) Differentiate primary succession and secondary succession. 2.0
c) What are the characteristics of climax community? 4.0
5. a) Differentiate lentic and lotic habitat. 2.0
b) Explain the energy flow of an ecosystem. 2.0
c) What are the different adaptation techniques of freshwater organisms in lotic waterbody? 3.0
6. a) Classify communities. 2.0
b) What do you mean by species richness, evenness and species abundance? 2.0
c) Write down the general principles associated with ecological succession. 3.0
7. Write short notes on any 2 (two) of the following: 3.5×2=7.0
 (a) Homeostasis and ecological balance;
 (b) Y-shaped food chain; and
 (c) Ecological indicator.

Section-B

8. a) What do you mean by trophic levels, food chain and food web? 2.0
b) What do you mean by ecosystem? 1.0
c) Briefly describe the components of ecosystem. 4.0
9. a) What do you mean by habitat and ecological niche? 2.0
b) Differentiate detritivores and decomposers. 2.0
c) Classify freshwater organisms based on their life form. 3.0
10. a) Differentiate oligotrophic and eutrophic lakes. 2.0
b) Write down zonation of lentic aquatic systems. 2.0
c) Briefly describe thermal stratification of a lake. 3.0
11. a) Classify population density. 2.0
b) What do you mean by biotic potential and environmental resistance? 2.0
c) Briefly describe two modes of population growth form. 3.0
12. a) State Allee's principle of aggregation and refusing. 1.0
b) Classify population regulation factors. 2.0
c) Briefly describe different types of interaction between two species. 4.0
13. a) What are the different types of population dispersion? 2.0
b) Write down the different forms of population dispersal. 3.0
c) Define ecotone and edge effect. 2.0
14. a) Define rapid zone and pool zone. 2.0
b) Show the major river systems in the map of Bangladesh. 2.0
c) Classify river based on age. 3.0

Chittagong Veterinary and Animal Sciences University, Chittagong
Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year-01 Semester-01, Final Examination' 2016

Course code: **BCH-101(T)**, Course Title: **Biochemistry (Theory)**

Total Marks: 70, Time: 3 hours

Answer any 6 (six) questions from each section where question 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 protein. Give an example of the following i) structural protein ii) transport protein iii) toxic protein iv) hormonal protein 1+2=3
- b) Describe the features of α -helix structure of protein. How does it differ from β -pleated sheet structure of protein? 2+1=3
- c) Enumerate the forces that are disrupted due to protein denaturation. Name one physical and one chemical agent for the denaturation. 2+1=3
- d) What is amino acid? Classify amino acids based on the nutritional requirement. 1+1=2
2. a) Define the following terms: i) annealing ii) central dogma iii) codon iv) T_m 4
- b) Mention the difference between DNA and RNA. Explain why nucleic acid is an acid despite containing lots of nitrogenous bases. 2+1=3
- c) State the Chargaff's rule for bases equilibrium in DNA. If a 100 base-pair DNA double helix contains 45 cytosine, how many of each of the other nucleotide bases does this DNA contain? 1+2=3
- d) Illustrate the differences between leading strand and lagging strand of DNA synthesis. 2
3. a) Give an outline of modern classification of enzymes. 4
- b) What do you mean by enzyme specificity with one example of each? 1+2=3
- c) Prove that $K_m = [S]$, when the reaction proceeds at fifty percent of maximum velocity. 2
- d) Define the following terms: i) co-enzyme, ii) co-factor, iii) zymogen 3
4. a) Water passes through maximum density at 4°C -explain the biological importance of this property of water for aquatic lives of polar region. 4
- b) Explain the notation used in the name α -D-(+)-glucopyranose. 3
- c) Compare and contrast the smooth ER, the rough ER and the golgi apparatus in structure and function. 3
- d) Name the organelle /site where the following process occur: i) CAC ii) β -oxidation iii) replication iv) transcription 0.5 \times 4=2

Section-B

5. a) Define biomolecules. Mention 3 different macromolecules with their building block, bond and major functions found in a living cell. 1+3=4
- b) Define carbohydrates. Classify carbohydrates based on the number of saccharide with examples. 1+2=3
- c) Write down the structure of a common hexose sugar and show the following: i) asymmetric carbon ii) carbonyl carbon iii) primary alcohol. How many isomers would be possible to form from this sugar? 3+1=4
6. a) What are lipids? All fats are lipids but all lipids are not fat-explain. 2+2=4
- b) Define rancidity. Why is oxidative rancidity observed more frequently in fish than in vegetables oil? Enumerate factors affecting the enzyme action. 1+1+1=3
- c) Define hormone. Classify hormone based on their chemical nature. Enlist the hormones of pituitary, hypothalamus, adrenal cortex and sex hormones with their functions. 1+2+2=5
7. a) Define metabolism. Differentiate between anabolism and catabolism. Enlist the metabolic pathways of carbohydrates metabolism in a fish cell. 1+1+2=4
- b) Glycolysis may be aerobic or anaerobic, but CAC is strictly aerobic-explain. 3
- c) Compare and contrast glucokinase and hexokinase in respect of the reaction that converts glucose to glucose-6-phosphate. 2
- d) What is steroid? Draw the structure of cholesterol with biological function. 1+2=3
8. Write short notes on **any three (3)** of the following: 4 \times 3=12
 - i) Replication
 - ii) Recombinant DNA technology
 - iii) Transamination and decarboxylation of amino acid catabolism
 - iv) ATP-ADP cycle
 - v) Bioluminescence in fish

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

B. Sc. Fisheries (Hons.) Year-01 Semester 01, Final Examination' 2016

Course code: **CSC-101(T)**, Course Title: **Computer Science (Theory)**

Total 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) Calculate the difference: 2.0
 $1100101001 - 110110110$
- b) Add the following binary number: 2.0
 $110110.110 + 1010.01$
- c) Name the elements of a computer system. 1.0
- d) Convert the following number into binary: 2.0
 5093.50_{10}
2. a) Define computer. What are the differences between analog computer and digital computer? 1.0
- b) Write down the characteristics of the following types of computer: 6.0
 - i) Super computer
 - ii) Micro computer
 - iii) Workstation
3. a) What is meant by computer generation? Describe the characteristics of the first and fifth generation computers. 5.0
- b) Write down the functions of control unit. 2.0
4. a) How does the computer accept input from the keyboard? Explain with proper diagram. 5.0
- b) List four characteristics you should consider when buying a monitor and why? 2.0
5. a) Explain how a CRT monitor displays images. 5.0
- b) Identify two types of flat panel monitors and explain their differences. 2.0
6. a) Explain briefly how a laser printer prints a page? 4.0
- b) Briefly explain the data processing cycle of a computer system. 3.0
7. a) What is network? What are the benefits of using network? 3.0
- b) Briefly explain the properties of LAN and WAN. 4.0

Section-B

8. a) Convert the following numbers according to instructions: 6.0
 - i) $245_{10} \rightarrow Octal$
 - ii) $110110.011_2 \rightarrow Decimal$
 - iii) $ABCD_{16} \rightarrow Octal$
- b) Perform 1's complement on the following numbers: 1
 - i) 1101101_2
 - ii) 1011.011_2
9. a) Write short notes on (any two) 3.0
 - i) CISC and RISC
 - ii) RAM and ROM
 - iii) Disk formatting and defragmentation
- b) Explain how data is stored on the surface of magnetic and optical disks. 4.0
10. a) What do you mean by operating system? Discuss any three functions of an operating system. 5.0
- b) Compare DOS, WINDOWS, and LINUX in a tabular form. 2.0
11. a) Draw the diagram and truth table of two-input AND gate. 3.0
- b) What is network topology? Discuss shortly any three basic topologies. 4.0
12. a) Define computer virus and antivirus. 2.0
- b) What do you mean by Database management systems? Write two reasons that are necessary for data normalization. 3.0
- c) What do you mean by IP address and subnet mask? 2.0
13. a) Briefly explain why we use cache memory and how it works. 3.0
- b) Write down the differences between primary memory and secondary memory. 4.0
14. a) Define software. Explain system software and application software with examples. 4.0
- b) Explain how computer data travels over telephone lines. 3.0

Chittagong Veterinary and Animal Sciences University, Chittagong

Faculty of Fisheries

B.Sc. Fisheries (Hons.) Year-01 Semester 01, Final Examination' 2016

Course code: **FRS-101(T)**, Course Title: **Fisheries Resources (Theory)**

Total Marks: 70, Time: 3 hours

Answer any **05 (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 do you mean by fisheries resources? 1.0
b) Enlist different types of fisheries resources of Bangladesh. 3.0
c) Write down the local and scientific name of six commercial indigenous fish species of Bangladesh. 3.0
2. a) Differentiate Haor and Baor. 2.0
b) Give the contribution of different sectors in the total fish production of Bangladesh. 3.0
c) Give the sectoral policies of DoF. 2.0
3. a) Enlist the organizations involved in the fisheries sector of Bangladesh. 2.0
b) Write down the mandate of the Department of Fisheries (DoF). 2.0
c) Describe the functions of BFDC. 3.0
4. a) Make a list of major SIS found in Bangladesh. 3.0
b) Briefly describe the importance of SIS. 2.0
c) What are the probable reasons behind degradation of SIS diversity? 2.0
5. a) What do you mean by "Jatka"? 1.0
b) Write down the importance of Hilsa fishery in Bangladesh. 3.0
c) Write a short note on movement and migration pattern of Hilsa. 3.0
6. a) Define indigenous, endemic and exotic species. 3.0
b) Enlist the local and scientific name of six exotic commercial fish species of Bangladesh. 3.0
c) What do you mean by invasive species? 1.0
7. a) Why Hilsa is called "Flag fish"? 1.0
b) Write down the biology of Hilsa fish. 3.0
c) What are the problems facing in Thai Pangus industry of Bangladesh during recent years? 3.0

Section-B

8. a) What will you consider to introduce an exotic fish species? 4.0
b) Write down the impacts of an invasive species on the aquatic food web of a new ecosystem. 3.0
9. a) What do you mean by bivalve? 1.0
b) List the local and scientific name of four bivalves of Bangladesh. 2.0
c) Write the scope of bivalve fishery in Bangladesh. 4.0
10. a) Enlist the group and scientific name of four commercial seaweeds in Bangladesh. 2.0
b) Write down the importance of seaweeds in Bangladesh. 3.0
c) What are the suitable locations of seaweed culture in Bangladesh. 2.0
11. a) What do you mean by recreational fisheries? 1.0
b) What are the different forms of recreational uses of waterbodies? 3.0
c) Give a short description on the fish hatcheries available in Bangladesh. 3.0
12. a) Which river is called the native spawning ground for IMCs and why? 2.0
b) What are the problems encountered in fish seed collection from natural sources? 2.0
c) What would be your recommendations towards the restoration of natural breeding grounds? 3.0
13. a) What are the prime objectives of artificial seed production in hatchery? 2.0
b) Write down the economic importance of shellfish in Bangladesh. 2.0
c) What are the factors responsible for the drastic decline in Indian major carp fertilized egg collection from Halda river? 3.0
14. a) Elaborate the abbreviations: BFRI, NFMP, BFDC. 1.0
b) What are the purposes of introduction of different foreign species? 2.0
c) Justify culture of Tilapia as an exotic species. 4.0

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

- | | | | |
|-----|----|--|-----|
| 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 |

A

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