Chittagong Veterinary and Animal Sciences University
B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013
Course No. & Title: EME-102(T) & Estuarine and Marine Ecology
Full 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)	Write the characteristics of estuary.	2.0
	b)	'Estuary acts as a nutrient trap'- explain.	2.0
	c)	Describe the geomorphological classification of estuary.	3.0
2.	a)	Define ecology and ecosystem.	2.0
	b)	Enlist the biotic and abiotic components of marine ecosystem.	2.0
	c)	Show the marine food web relating different food chain and trophic level.	3.0
3.	a)	What is LME?	2.0
	b)	What are the factors influencing marine productivity?	2.0
	c)	Enlist different types of adaptation of marine organisms.	3.0
4.	a)	What is neritic zone?	2.0
	b)	Distinguish between pelagic and demersal organism.	2.0
	c)	Illustrate the bottom topography of sea with diagram.	3.0
5.	a)	Enlist major kingdoms of marine biomes with example.	2.0
	b)	How the marine plant biomes can be classified on the basis of kingdom?	2.0
	c)	Write down the various adaptation showed by marine animals.	3.0
6.	a)	What is coral reef?	1.0
	b)	Describe 'Darwin's Subsidence Theory' of coral reef formation.	3.5
	c)	What are the suitable conditions for coral development?	2.5
7.	Write short note on: (any two)		3.5×2= 7.0
	a) ENSO, b) Marine mammals, c) Hadalopelagic organisms		

Section – B

8.	a)	What is keystone species?	1.5
	b)	Why biomass pyramid of marine differs from terrestrial?	2.5
	c)	Draw a generalized estuarine food web.	3.0
9.	a)	Calculate the energy flow of marine food chain from producer to top predator.	2.0
	b)	Give a list of subtidal communities found adjacent to coastal areas.	2.0
	c)	Describe the vertical zones found in an estuary considering tidal influence.	3.0
10.	a)	Classify earth surface zone on the basis of latitude circle.	2.0
	b)	Write down the characteristics of tropical and temperate zone.	2.0
	c)	Mention the geographical distribution of Hilsha and Tuna fish.	3.0
11.	a)	What are the ways of estuary formation?	2.0
	b)	Write down the name of 10 (ten) estuary situated adjacent to the Bay of Bengal.	2.0
	c)	Describe different types of estuary based on vertical structure of salinity.	3.0
12.	a)	Write the types of estuarine circulation.	2.0
	b)	What forces cause estuarine mixing?	2.0
	c)	Describe the circulation modes proposed by Elliott (1976) with necessary figure.	3.0
13.	a)	Classify the intertidal zone of muddy shore with faunal communities.	2.0
	b)	Classify marine habitat with schematic diagram.	5.0
14.	Write short note on: (any two)		3.5×2= 7.0
	a) Intertidal rocky shore, b) Coastal upwelling, c) BoBLME		

Chittagong Veterinary and Animal Sciences University
B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013
Course No. & Title: ICH-102(T) & Ichthyology
Full 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 Ichthyology.	0.5
	b)	Write down the main characteristics of chondrichthyes.	1.5
	c)	Describe the orders of subclass elasmobranchii with example.	5.0
2.	a)	What do you mean by agnatha and gnathostomata?	0.5
	b)	Mention the importance of studying ichthyology.	2.0
	c)	Differentiate between the order mastacembeliformes and beloniformes.	1.0
	d)	Describe the order siluriformes, cyprinodontiformes and pleuronectiformes.	3.5
3.	a)	Briefly describe the components of fish blood.	2.0
	b)	What are the major functions of blood in fish?	5.0
4.	a)	Classify fish muscle.	2.0
	b)	Describe the skeletal muscle of median fin and paired fin.	5.0
5.	a)	Define endocrine gland.	.0
	b)	Mention the locations of different endocrine glands and their secretion and functions in fish.	6.0
6.	a)	Define respiration.	1 5
	b)	List down the fish respiratory devices.	1.5
	c)	Describe in details the respiratory mechanisms in different types of fish.	4.0
7.		Write short notes on any two of the followings:	3.5x2
	a)	Feeding adaptation of fish	=7.0
	b)	Notochord	
	c)	Pseudobranch	

Section- B

8.	a)	Classify the nervous system on the basis of anatomy.	1.0
	b)	Write down the name of the cranial nerves with their central and peripheral connection and function.	6.0
9.	a)	What do you mean by food and feeding habit?	1.5
	b)	Make a list of associate organs of digestive system.	1.5
	c)	Illustrate the digestive tracts observed in different groups of fish.	4.0
10.	a)	Write down the name of component of fish skeleton.	1.0
	b)	Draw the figure of trunk vertebra and first caudal vertebra.	2 5
	c)	Describe the pectoral and pelvic fin support of bony fish.	3 5
11.	a)	Classify fish scale on the basis of shape.	2.5
	b)	What are the modifications of bony ridge scales in fish?	3.5
	c)	Mention the principal function of scales.	1.0
12.	a)	Define bioluminescence.	0.5
	b)	Write down the function of bioluminescence.	2.0
	c)	Briefly describe the structure of light organ.	4.5
13.	a)	What do you know about the origin of electric organ in fish?	1.5
	b)	Make a list of groups of fish having electric organ.	4.0
	c)	What are the functions of electric organ?	1.5
14.		Write short notes on any two of the following:	3.5x2
	a)	Derivatives of skin	=7.0
	b)	Structure of kidney in fish	
	c)	Gas secreting complex	

Chittagong Veterinary and Animal Sciences University
B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013
Course No. & Title: WQM-102(T) & Water Quality Management
Full 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)	What do you mean by water quality?	2.0
	b)	What is the relationship between water quality and fish production?	2.0
	c)	List the acceptable concentrations of DO, NH_3, NO_3^+ ,CO_2, phosphorus and iron in aquaculture pond	3.0
2	a)	What are the sources of DO in aquaculture pond?	1.5
	b)	Write down the symptoms of DO insufficiency in fishes.	1.5
	c)	How DO can be depleted from an aquaculture pond?	2.0
	d)	What types of remedial measures can be taken to solve DO deficiency?	2.0
3	a)	What are the sources of turbidity in aquaculture system?	2.0
	b)	Write down the impacts of turbidity on aquatic organisms.	2.0
	c)	What management measures will you suggest to a fish farmer to control turbidity?	3.0
4.	a)	What are the basic requirements of water quality to set up a fish hatchery?	2.5
	b)	Enlist the water quality criteria and parameters suitable for shrimp culture.	2.5
	c)	Why off-odor develops in catfish farming and how it can be removed?	2.0
5.	a)	What are the forms and sources of NH_3 in fish pond?	3.0
	b)	What are the harmful effects of NH_3 on fish?	2.0
	c)	'Preventive measure is the best way of NH_3 control'- justify the comment	2.0
6.	a)	What is coastal aquaculture?	1.0
	b)	Write the impacts of coastal aquaculture on coastal environment and social status.	3.0
	c)	How the negative impacts of shrimp farming can be mitigated?	3.0
7.	Write short note on: (any two)		3.5×2= 7.0
	a)	Eutrophication, b) Recirculatory Aquaculture System, c) POP's	

Section-B

8.	a)	What special characters of water support fishes as an ideal living media?	2.0
	b)	How excessive iron problem in hatchery water supply can be mitigated?	2.0
	c)	Write the goals and the importance of water quality management in aquaculture and fisheries.	3.0
9.	a)	Write the significance of water pH in an aquaculture pond.	3.0
	b)	What are the impacts of high and low pH on aquatic organisms?	4.0
10	a)	What is pen culture?	1.0
	b)	Write the pros and cons of pen culture considering water quality aspects.	3.0
	c)	What water quality should be considered to set up a fish cage?	3.0
11.	a)	What are the gasses found dissolved in aquatic environment?	2.0
	b)	Write the sources of CO_2 in a pond.	2.0
	c)	How buffering of waterbody is maintained through CO_2- HCO_3^- - CO_3^{2-} complex system?	3.0
12.	a)	Do you think lime is a fertilizer?	2.0
	b)	Why nitrogen fertilizers are less important than phosphate fertilizers in aquaculture?	2.0
	c)	Write down the problems associated with over feeding in aquaculture.	3.0
13.	a)	What is water pollution?	1.0
	b)	What are the major types of water pollutants?	3.0
	c)	Write down the impacts of water pollution on aquatic biota.	3.0
14	Write short note on: (any two)		3.5×2= 7.0
	a)	Pond fertilization, b) Ammonia management in pond, c) Water quality variables	

Chittagong Veterinary and Animal Sciences University
B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013
Course No. & Title: CAM-102(T) & Coastal Aquaculture and Mariculture (Theory)
Full 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 coastal aquaculture. 2.0
   b) What are the importances of coastal aquaculture in case of national and global context? 5.0
2. a) Briefly discuss the present status of coastal aquaculture in Bangladesh. 5.0
   b) How the coastal resources can be managed properly? 2.0
3. a) What are the general site selection criteria in coastal aquaculture? 2.0
   b) Write the important bio-physical factors to be considered during site selection of a coastal aquaculture farm. 5.0
4. a) What is the lunar effect on coastal aquaculture? 2.0
   b) Describe the importance of sea water properties for coastal aquaculture farm. 5.0
5. a) Why Seabass is called eurihaline species? 2.0
   b) Describe the life cycle of Seabass. 5.0
6. a) Write down the shrimp culture system in tabular form which is being practiced in South East Asian countries. 4.0
   b) What is the most protective culture method of oyster? 3.0
7. Write short note on any two of the following: 3.5x2 = 7.0
   a) Spat;
   b) Acid sulfate soil; and
   c) Impact of mangrove forest deforestation.

Section-B

8. a) Define seaweed farming. 1.0
   b) Enlist 8 (eight) major species of seaweed around the world. 2.0
   c) What are the potentialities of seaweed? 4.0
9. a) Enumerate the various culture techniques of edible seaweed. 3.0
   b) Briefly describe the production technique of *Porphyra.* 4.0
10. Illustrate integrated tilapia and seabass culture technique in coastal area of Bangladesh. 7.0
11. What is crab hardening and fattening? Describe crab hardening and fattening procedure followed the farmers at Paikgacha, Khulna area. 7.0
12. a) What is scallop? 2.0
    b) Describe briefly the raft or long line culture method of scallop. 5.0
13. a) How many types of shrimp culture system exist in our country? 1.0
    b) Write down the shrimp culture system in tabular form practiced in Bangladesh. 6.0
14. Write short note on any two of the following: 3.5x2 =7.0
    a) Mangrove as haven for coastal fisheries;
    b) Eye stalk ablation in shrimp; and
    c) Veliger larvae.

Chittagong Veterinary and Animal Sciences University

B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013

Course No. & Title: HPF-102(T) & Handling and Preservation of Fish

Full 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

a)	Mention the proximate composition of fish.	1.0
b)	Describe the physical structure of fish muscle.	4.5
c)	Write down the causes of fish spoilage.	1.5
a)	Define commercial handling of fish and shell fish with their objectives.	1.5
b)	Draw a flow diagram on post mortem changes in fish.	3.5
c)	How sorting and grading helps in quality improvement of fish on the fishing vessel?	2.0
a)	Differentiate between sarcoplasmic and stroma protein.	3.0
b)	What are the different fractions of fish lipid? Mention their functions.	4.0
a)	Define semi-perishable food with proper example.	1.0
b)	Write down the quality handling practices of fish on board vessels.	4.5
c)	What do you understand for standard of air freight packaging?	1.5
a)	What are the parameters you will consider for site selection of a fish processing plant?	1.0
b)	Draw a layout of shrimp processing plant	4.5
c)	Why staff hygiene is an important issue in fish processing plant?	1.5
a)	Prepare a list of suitable types of disinfectants for cleaning a fish working premises.	3.0
b)	How "Hilsha' fish is transported and marketed throughout our country?	4.0
a)	Name some chemicals used for fish preservation. What are the requirements of food preservatives for chemical preservation of fish? Do you think these requirements are followed for chemical preservation of food in Bangladesh?	5.0
b)	Prepare a list of heat treatment methods and their temperature ranges used for food preservation.	2.0

Section-B

a)	Define super chilling.	1.0
b)	Describe different stowage methods of fish in fishing vessels.	4.5
c)	Mention the major changes occurs during freezing	1.5
a)	Mention the method of live fish transportation.	1.0
b)	Briefly discuss the factors affecting in successful transportation of live fish.	5.0
c)	Write down the advantages of irradiation method in fish preservation.	1.0
0 a)	Calculate the amount of ice required for 25 kg Chinese Pomfret on a 12 hrs journey from Teknaf to Chittagong where fish is being carried in a wooden box with a lid of 0.8m x0.5m and 0.5cm thickness of ice under the lid and warm air at 27°C above it. (Ice melting rate 9.1Kg at 27 °C/12hrs.)	5.0
b)	Why freezing point of fish is far lower than that of pure water?	2.0
1. a)	Define glazing. Give example of some glazed fish products. Mention the purpose of glazing in shrimp processing industries in Bangladesh.	3.0
b)	What are the properties of an ideal fish package?	4.0
2. a)	Draw and label a typical fish freezing curve.	2.5
b)	Prepare a list of different types of freezer used for fish freezing.	2.5
c)	Define bactericidal ice. Write down the additives used to prepare it.	2.0
3. a)	Define IQF. What are its advantages?	3.0
b)	"For every hour fish is kept at ambient temperature, the equivalent of 1day's shelf life lost"- Justify.	4.0
4 a)	Identify the problems of ice preservation in Bangladesh. How these can be mitigate to ensure quality of iced fish?	5.0
b)	How removal of water results in enhanced shelf fish of fishery products?	2.0

Chittagong Veterinary and Animal Sciences University
B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013
Course No. & Title: ASS-102(T) & Aquatic Soil Science
Full 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 soil and Soil Science.	2
	b)	What are the significance of soil in Fisheries?	2
	c)	Write down the components of soil.	3
2	a)	What do you mean by cation exchange and cation exchange capacity?	4
	b)	Discuss the importance of cation exchange.	3
3	a)	What do you mean by acid sulphate soil?	2
	b)	Discuss briefly the formation of acid sulphate soil with equation.	5
4	a)	Write down the advantages and disadvantages of sandy soil.	3
	b)	How would you solve the problems of water retention and fertility of sandy soil?	4
5	a)	Define clay and humus.	3
	b)	Discuss the properties of humus.	4
6	a)	Write down the preventive measures of the high soil organic matter in pond.	2
	b)	Discuss bottom mud as source of nutrients.	5
7	a)	Mention the name of different field tests for the determination of soil textural class.	2
	b)	Discuss briefly the physical properties of soil.	5

Section-B

8	a)	What do you mean by soil textural class? Classify soil based on it.	3
	b)	Briefly discuss the suitability of soil textural class for aquaculture.	4
9	a)	Define Bioturbation.	2
	b)	Write down the effects of bioturbation on physicochemical properties of overlying water.	5
10	a)	What do you mean by soil biology?	2
	b)	Describe briefly the importance of soil microorganisms.	5
11	a)	Name the processes of encouraging beneficial microorganisms.	2
	b)	List the soil microorganisms with mentioning their action in soil.	5
12	a)	Write down the disadvantages of salt affected soil.	2
	b)	Discuss the management and reclamation of saline, sodic and saline-sodic soil.	5
13	a)	What do you mean by soil fertility and soil productivity?	2
	b)	Describe soil-water interactions and their effects on the productivity of water bodies.	5
14	a)	Name the essential nutrients of plant.	2
	b)	Discuss the balanced nutrition of plants through fertilization.	5

Chittagong Veterinary and Animal Sciences University
B. Sc. Fisheries (Hons.) 1st Year 2nd Semester Final Examination, 2013
Course No. & Title: CSC-102(T) & Computer Science
Full Marks: 70; Time: 3 Hours

(Figures in the right margin indicate full marks. Answer any Four(4) questions from each section where question 1 of each section is compulsory. Use separate answer script for each section.)

Section-A

1. a) Calculate the difference: 02
   1001101001 − 110110110
   b) Add the following binary number 02
   101101111.11 and 111111100.11
   c) What do you mean by Human ware? 01

2. a) What is meant by Computer generation? Describe the characteristics of the First and Fifth generation computers? 05
   b) Explain how data is stored on the surface of magnetic and optical disks. 05

3. a) What do you mean by operating system? Discuss the basic functions of operating system(OS)? 04
   b) Write some basic features of Unix. 04
   c) Write the name of 4 (four) popular operating systems (except Windows and Unix). 02

4. a) Distinguish between Data bus and address bus. 02
   b) Define modem. Write down the functions of different types of modem. 03
   c) Describe the start up process that a computer follows when it is turned on. 05

5. a) Define : i) disk formatting ii) File Allocation Table 02
   b) 'CPU is commonly termed as computer brain'-why? 05
   c) Distinguish between internal and external fragmentation. 03

Section B

1. a) Convert the Hexadecimal from $110001001011101_{(2)}$ 2.5
   b) Convert to Binary from $82980_{(10)}$ 2.5

2. a) Write short notes on (any two) 05
      i) Volatile memory and Non –volatile memory
      ii) Impact printer and Non- impact printer
      iii) CISC and RISC
   b) List the four benefits of using a network. Differentiate between LANs and WANs. 05

3. a) What is network topology? Write short notes on three basic topologies. 05
   b) What do you mean by IP address and subnet mask? 03
   c) Explain how computer data travels over telephone lines. 02

4. a) Define computer virus and anti -virus. 03
   b) What do you mean by Database management system? Write two reasons why need data normalization. 05
   c) Write the name of some popular web browser. 02

5. a) What is SQL? Describe the structures and uses of a SQL statement. 05
   b) Describe Client-server database. 05

Chittagong Veterinary and Animal Sciences University, Chittagong
Faculty of Fisheries
Year -01, Semester-02, Final Examination' 2014
Course Title: Handling & Preservation of Fish (T), Course No: HPF-102
Total Marks: 70, Time: 3 hour

Answer any 05 (five) question from each section. Figures in the right margin indicate full marks.

Section-A

1.	a.	Why fish is considered as one of the best food?	2.0
	b.	What do you mean by proximate composition?	1.5
	c.	Differentiate between spoilage and deterioration.	2.0
	d.	What is white muscle and dark muscle in fish?	1.5
2.	a.	Write down the importance of handling of fish and shellfish.	2.5
	b.	Write down the causes of fish spoilage and mention the remedial measures of such spoilage.	4.5
3.	a.	Mention the steps to be followed in handling fish on board of a trawler in the Bay of Bengal.	3.5
	b.	Why ice is considered the best medium for preservation of fish?	1.5
	c.	What are the difference between plate freezer and immersion freezer?	2.0
4.	a.	Define sorting and grading of fish.	1.0
	b.	Calculate the amount of heat has to be removed from 5 kg Hilsha to freeze at -40°C, where initial temperature of fish is 25°C.	4.5
	c.	Write down the factors to be considered during sorting and grading of fish	1.5
5.	a.	Define commercial handling of fish and shell fish. Mention their objectives.	1.5
	b.	Give a schematic diagram on post mortem changes in fish.	4.0
	c.	Write down the importance of fish minerals and vitamins on human body.	1.5
6.	a.	Write down the pre-requisites for establishing an ideal fish processing plant.	1.0
	b.	Draw a layout of shrimp processing plant.	4.5
	c.	Write down the importance of waste disposal system in a fish processing plant.	1.5
7.	a.	What are the objectives of good sanitation in a fish working premises?	2.0
	b.	Mention the importance of staff hygiene in quality fish preservation.	1.5
	c.	Write down the specification of entry door, floor, window and wall of a good fish working premises.	3.5

Section-B

8.	a.	What is fish freezing? Briefly describe the changes that occur in fish during freezing.	2.0
	b.	Draw and enumerate different stages of a typical fish freezing curve.	2.0
	c.	Differentiate between slow freezing and quick freezing.	1.0
	d.	Define water activity (a_w). What are the roles of a_w in fish preservation? 'a_w of caviar is 0.92'- justify.	2.0
9.	a.	Discuss different stowage methods of fish in ice on fishing vessels with advantages and disadvantages of each method.	4.0
	b.	How ice cools fish? What are the points we should consider for proper icing?	3.0
10.	a.	Do you think that icing of fish in Bangladesh is a satisfactory way of fish preservation? Justify your answer.	3.0
	b.	What are the differences between fish preservation and fish conservation?	2.0
	c.	Write down the scientific name of two shellfish and two mollusks having commercial importance.	2.0

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 <u>04 (four)</u> questions from each section where question <u>1 and 6 are compulsory</u>. *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 ii) 1010-1011	4
	b)	Add the following numbers: 100101 and 10100	2
	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. $7025_{(8)}$	2.5
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