

LAKSHYA INSTITUTE OF TECHNOLOGY

QUESTION BANK



M4/46, ACHARYA VIHAR, BHUBANESWAR- 14
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SEMESTER - I

1ST SEMESTER

I-S-B.Sc.-(ITM)-CBCS-AECC-I-(C.English)-R & B

2018

Full Marks -80

Time-As in the Programme

The figure in the right hand margin indicates marks.

Section-A

Answer all questions.

[1x20]

- Fill in the blanks of the following sentences choosing appropriate alternatives.
 - One of the chairs _____ broken.
(a) is (b) are (c) have (d) does
 - Neither you nor he _____ willing to come.
(a) were (b) does (c) has (d) was
 - No one _____ to be criticized.
(a) like (b) liking (c) likes (d) link
 - A man as well as his Friends _____ ready to jump.
(a) was (b) have (c) has (d) were
 - Every day and every night _____ its own pleasures.
(a) bring (b) brought (c) brings (d) bringing
- the passive form of "The people in South India eat Sun-boiled Rice" is _____.
 - The passive form of "The barber cut my hair" is _____.
 - The passive form of "Sarita has typed the Letter" is _____.
 - The passive form of "Nitin beat the dog hard" is _____.
 - The passive form of "The police are investigating the cases" _____.
- Make sentences :
Abide by, abstain from, Coincide with, Comply with, deficient in, Freedom from, proficient in, Rejoice at, Weary of, yield to.

Section – B

Answer any SIX:

[6X10]

- Draft a letter to be sent to the local government offices and business houses for promoting the sale of a newly designed steel cabinet your firm has just introduced in the market.
- As the Librarian of your organization write a letter claiming compensation for 39 books which arrived in damaged condition.
- Discuss the barriers to effective written communication. Illustrate your answer with examples.
- Make sentences using the following pairs of words.
 - Principal, Principle
 - Council, Counsel
 - Write, Right
 - Accept, Except
- Write short notes on:
 - Horizontal Communication.
 - Vertical Communication.
 - Interpersonal Communication.
 - Grapevine Communication.
- What is creative writing? How to write a business letter?
 - Discuss the importance of Reading skills with suitable example.
- What do you mean by information transfer? How to interview for the newspapers.
- Assuming yourself to be the head of the Electronic department of Your institution, write a report of trouble on the fire caused in the Laboratory in Your department. Invent details.



1ST SEMESTER

BCA 1ST YEAR (PRINCIPLE OF MANAGEMENT)

2018

Full Marks- 80

Time- As in the Programme

The figure in the right hand margin indicates marks.

Section- A

1. Answer all the questions. [2×10]
- Is management – an art or science ?
 - What are the essential skills of Managers ?
 - List the contributions of Fayol towards Management.
 - What do you understand by the term 'Joint Stock Company'?
 - Important observations subjected about planning ?
 - What are the steps involved in creative process
 - What is a SCAMPER tool?
 - What are the advantages of democratic leadership ?
 - What are the steps involved in simplex tool ?
 - What are the basic steps involved in the process of controlling ?

Section – B

Answer any five questions . [12 × 5]

- What is the roll of scientific management in the modern era?
 - explain the contributions of F.W. Taylor to management.
- what are the various environmental factors that a manager should consider in an organisation ?
 - important observation subjected about planning?
- Explain the process of decision making with neat diagram?
 - Define MBO. Explain the process of MBO with the merits and demerits?
- Explain the various types of planning?
 - Mention and explain the steps in planning with neat diagram?
- Explain in detail about delegation of authority?
 - What do you mean by departmentation? Discuss in detail about different strategies adopted in departmentation ?
- Explain detail about performance appraisal with neat diagram?
 - Explain the creative process?
- What is leadership? Explain briefly different theories of leadership?
 - Write notes on motivation and personality



1ST SEMESTER

2020

Fill Marks – 50

Time – As In the programme

SUB- CO

The Figure in the right hand margin indicate marks.

Answer ALL questions.

Group-A

1. (Answer all questions. Each carries 1 marks)
 - (i) What is the simplified SOP (Sum of Product) form of the Boolean expression $(P + Q' + R) \cdot (P + Q' + R) \cdot (P + Q + R')$
 - (ii) What is the minterm expansion of $f(P, Q, R) = PQ + QR' + PR$
 - (iii) In what technology, the implementation of the register file is by using an array of memory locations.
 - (iv) In a three BUS architecture, how many input and output ports are there ?
 - (v) For a 3 BUS architecture, is the below code correct for adding three numbers ?
P Court, R=B, Marin, Read, Inc PC
WMFC
MDRout, R=B, IRin
R4outa, R5outb, Select A, ADD, R6in, End
 - (vi) What is the main advantage of multiple bus organization over a single bus ?
 - (vii) What is the minimum time delay between two successive memory read operations ?
 - (viii) VLSI stands for what ?
 - (ix) The cells in a row are connected to a common line called what ?
 - (x) Differentiate between arithmetic and logic instruction ?

Group-B

1. (Answer all questions. Each carries 8 marks)
 - (a) Simplify SOP (Sum of Product) form of the Boolean expression. $(P' + Q' + R) \cdot (P + Q' + R) \cdot (P + Q + R')$
 - (b) Explain the concept of K-Map.
OR
 - (c) State the functionalities of any two logic gates.
 - (d) Discuss some characteristic of different number system.
2.
 - (a) What is PLD ? State the important characteristics of PLD.
 - (b) State the various approaches used for performing I/O. What role an I/O module plays while performing I/O.
OR
 - (c) What steps a processor take, when an interrupt occurs.
 - (d) State the characteristics of CPLD.
3.
 - (a) What is PLD ? State the important characteristics of PLD.
 - (b) State the various approaches used for performing I/O. What role an I/O module plays while performing I/O.
OR
 - (c) What steps a processor take, when an interrupt occurs.
 - (d) State the characteristics of CPLD.

1ST SEMESTER

4. (a) State the architecture of digital computer.
(b) Explain the functions of processor.
OR
(c) What is Addressing Mode ? What types of addressing mode are supported in computer architecture and their characteristics ?
5. (a) Discuss the structure of register.
(b) Define the term instruction. State the characteristics of different instructions?
OR
(c) Discuss the following.
» Basic I/O Operation
» Load and Store Instructions
(d) State the types of registers used in a processor.
6. (a) Give a brief classification of ROM.
(b) What is cache memory ? Give examples of some solution to cache coherence.
OR
(c) Write down the major feature of DRAM.
(d) State the parameters using which the performance of a Hard Disk is measured.



1ST SEMESTER

2020

SUB-EVS

BSc. Comp.Sc.

Group-A

1. (Answer all questions. Each carries 2 marks)
- What is biosphere?
 - How Lithosphere, Hydrosphere & Atmosphere interact Biosphere ?
 - What is Green Marketing ?
 - How Eco Mark helpful ?
 - What is Plastic waste ?
 - Describe the categories of Plastic & its Recovery.
 - How ozone layer depletion causes ?
 - Give the difference between GIS, GPS, & RS.
 - Define the term Eco labelling.
 - What is Green Technology ?

Group-B

1. (Answer all questions. Each carries 12 marks)
- What is energy resources? Explain about the non-renewable resources & types.
 - What is renewable resources? Why alternative Renewable sources need to the environment?
- OR
- How land use planning to the environment. Describe Land resources.
 - Explain about nuclear energy resources.
2. (a) Write the 12 principles of Green Chemistry?
(b) Explain about ISO certifications for the substances.
- OR
- How green computing design helpful for the environment?
 - Explain the causes of climate change? How global warming responsible for it?
3. (a) Describe the stages of EIA.
(b) What is solid waste? Explain about E-waste sources, causes & management.
- OR
- What is EIA? Explain its role & objectives. Write the difference between EIA, EIS &EA.
 - Describe about the Environmental Protection Act 1986.
4. Write short notes on: (Any two)
- Water Act
 - Air Act
 - Wildlife Protection Act



1ST SEMESTER

2020

SUB- EVS

BSc. ITM

1. Answer the following questions. [1X10]
- (a) What are the control methods of population?
 - (b) What are the effects of radiation pollution?
 - (c) What is soil pollution?
 - (d) Define wild life management.
 - (e) What is radiation pollution?
 - (f) How does nitrogen return to the soil?
 - (g) How can land pollution be prevented?
 - (h) What is soil erosion?
 - (i) What is biogeochemical cycle?
 - (j) What are the compositions of air?
2. Explain various components of ecosystem in details. [14]
- OR
- Discuss various components of environment and layers of each component with suitable diagram. [14]
3. Define urbanization. Discuss its effects on society. [14]
- OR
- Discuss different sources of water pollution. Explain different measures to control over water pollution. [14]
4. What is noise pollution? Discuss different sources of noise pollution. What are the effects of noise pollution? [14]
- OR
- What are communicable diseases? Write down its transmission methods. How it is different from non-communicable diseases. [14]
5. Write down the role of Central and State Pollution Control Boards in details. [14]
- OR
- Discuss various environment movements in India for safety of the environment. Also explain how women contribute towards such movement. [14]
6. Write down different steps taken by the government for management and conservation of wild life. [14]
- OR
- Write short notes (Answer any two) [7X2]
- (a) Wildlife Act, 1972
 - (b) Environment Protection
 - (c) Conservation of natural resources
 - (d) Management of natural disaster



1ST SEMESTER

BCA 1ST YEAR (PRINCIPLE OF MANAGEMENT)

2020

Full Marks- 80

Time- As in the Programme

Answer All questions including Q. No- 1

The figure in the right hand margin indicates marks.

1. Answer all the questions. [2×5]
 - (a) Define personality?
 - (b) Define level of management?
 - (c) Discuss the major characteristics of management as profession.
 - (d) What are the main features of organisational development ?
 - (e) Differentiate between the formal and informal organisation ?
2. Explain the concept of management and bring out its importance in present day context ?
OR [14]

What is the nature management principle ?
How do they contribute in effective managing ?
What precautions will you take while applying management principle in practice ?
3. What is the roll of creativity in decision making? Discuss its process and the way an individual can be made more creative. [14]
OR
What are organisational changes often resisted by individual and group within the organisation ?
How can such resistance be prevented or overcome?
4. What are the common barriers to communications in an organisation? How then can be overcome [14]
OR
What is the concept of motivation? How does it affect the behaviours and performance?
5. How will define leadership as a process of influence? What are its various features? [14]
OR
Point out the source of man power recruitment?
What source will you prefer to recruit managerial personnel & why?
6. What will you identify training need of an employee? What are the major areas in which employees need training? [14]
OR
What do you mean by performance appraisal?
Discuss its need and importance in an organisation



1ST SEMESTER

2018

Fill Marks – 50

Time – As In the Programme

SUB- CO

The Figure in the right hand margin indicate marks.

Answer from both Section as directed therein.

SECTION-A

1.
 - (a) Why the NOR gate and NAND gate is called as universal gate (1x10)
 - (b) Differentiate between EPROM and EEPROM
 - (c) Give one example of logical instruction and explain it.
 - (d) Explain the register structure of ARM processor
 - (e) Explain t flip flop along with its truth table.
 - (f) simplify the following Boolean functions to a minimum number of literals.
 $f_d = x.y + x.z + y.z$
 - (g) Differentiate between sequential and combinational logic circuit
 - (h) what is register more instruction explain with example
 - (i) What is a sub- routine
 - (j) Differentiate between synchronous DRAM and asynchronous DRAM.

Section-B

ANY Five

(8x5)

1.
 - (a) Express the Boolean function $F = x + y + x.z$ in product of maxterms (sums) form.
 - (b) Explain the basic structure of a computer system
2.
 - (a) Construct a logic diagram for the Boolean expression $A + B + C$ USING NOR/NAND gates only.
 - (b) Explain different types of addressing modes
3.
 - (a) Compare the speed, size and cost of memory
 - (b) Minimize the logical expression using 4- variables k-map
 $f(a,b,c,d) =$



1ST SEMESTER

2018
Fill Marks – 50
Time – As In the Programme
The Figure in the right hand margin indicate marks.
SUB- CO

SECTION-A

1. Answer the following margin indicate marks (1x10=10)
- In computers, subtractions generally carried out by which method?
 - What is flip-flop?
 - What is waiting time?
 - What is the use of Program counter Register?
 - What is process state?
 - What do you mean by write back?
 - Which method is used for resolving data dependency conflict by the compiler itself.?
 - How many 128x8 RAM chips are needed to provide a memory capacity of 1024 bytes?
 - Which logic gate is known as universal logic gate?
 - Excess-3 equivalent representation of (1234) H is _____

Group-B

2.
 - Explain the different number system with example?
 - Convert these numbers to decimal
 - $(101001)_2$
 - $(172)_8$
 - $(1a4)_{16}$
 - $(A1F)_{16}$

OR

 - Draw different Logic Gates with their Truth Tables
 - Simplify the Boolean function F.
 $F(A,B,C,D) = \sum(1,3,4,7,9,10,11,12,15)$

3.
 - Explain following two flip-flops
 - SR Flip-flop
 - jk Flip-flop
 - What is Register Transfer Notation?

OR

 - Explain the following terms
 - Decoder
 - PLDs
 - CPLDs
 - fpga

1ST SEMESTER

- 4 a) Explain the Basic structure of computer with input output units
b) Explain different Addressing Modes with examples.

OR

Define the following

- i)Relative Addressing
- ii)Direct Addressing
- iii)Byte Addressability
- iv)Resister Addressing

5. Explain any Two for ARM Processor

- I) LogicInstruction
- ii) Flow Control instruction
- iii) Load and store instruction

OR

- b) Explain Arithmetic instruction, logic instruction of ARM processor
- c) Explain Arithmetic and Logic Instructions and flow Control Instructions of Power PC

6. a) Define the terms briefly (8)

- i) Asynchronous DRAMS
- ii) Static Memories
- iii) Optical Disks
- iv) RAMBUS Memory

OR

Explain the entire memory structure of a Computer system



1ST SEMESTER

2019

Fill Marks – 50

Time – As In the Programme

SUB- CO

The Figure in the right hand margin indicate marks.
(Section A is compulsory. Answer any Five from Section B).

SECTION-A

1. Answer the following questions. [2×5]
- (a) Differentiate between Computer Organization and Computer Architecture ?
 - (b) What is Amdahl's Law ?
 - (c) What are the stages of an instruction cycle ?
 - (d) What are basic elements of floating-point notation ?
 - (e) What is the distinction between spatial locality and temporal locality?

SECTION - B

2. (a) Explain the basic structures of a computer system [8×5]
(b) Express the Boolean function in to its equivalent canonical sum of product form (SOP).
 $F : (\bar{X} + \bar{Y} + \bar{Z}) \cdot (\bar{X} + Y + Z) \cdot (\bar{X} + \bar{Y} + Z) \cdot (\bar{X} + \bar{Y} + Z)$
3. (a) Use the Booth algorithm to multiply – 5 (multiplicand) by 4 (multiplier)
(b) Differentiate single core processor and multicore processor, GPU and CPU, Embedded system and Desktop system.
4. (a) Minimize the logical expression using 4 variable K- Map
 $F(w, x, y, z) = \sum m(0,2,3,4,6,7,8,10,12)$
(b) Describe PAL and FPGAs.
5. (a) What different types of Flip-flops (JK flip-flop, D-Flip-Flops and T Flip-flop).
(b) What is overflow in computer arithmetic of binary numbers ? Why subtraction of binary numbers is not done using sign magnitude representation ?
6. (a) Design 8 to 1 multiplexer and 1 3 × 8 decoders ?
(b) Determine the effective CPI, MIPS rate and executing time of a program is run on a 40MHz processor. The executed program consists of 1,00,000 instruction Execution with the following instruction mix and clock cycle count.

7. (a) Explain different types of instruction format of ARM processor.
(b) Explain the IEEE 754. Standard for floating point operation.
8. (a) Write about single bus and multibus organization used in a processor.
(b) Discuss interrupts and their types.



1ST SEMESTER

2019

Fill Marks – 50

Time – As In the Programme

SUB- CO

The questions are of equal value

Answer ALL questions

SECTION-A

Answer all questions, Each carries 1 mark

1.
 - i) What is computer Architecture?
 - ii) What are the different types of fields that are part of an instruction?
 - iii) Mention important steps for computer design?
 - iv) What are the basic components of a Microprocessor?
 - v) What are different types of interrupts in a microprocessor system?
 - vi) What is the use of RAID system?
 - vii) What technique is used to automatically move program and data blocks into the physical main memory when they are required for execution?
 - viii) Explain what type of memory that can be erased with the electric discharge?
 - ix) What are the types of micro operations?
 - x) What is direct mapping?

Group-B

Answer all questions .Each carries 8 Marks

2.
 - a) Simplify the following Boolean function.
 $F(W,X,Y,Z)=WSY'+XY+W'YZ'$
Using K-map
OR
 - b) Simplify the following Boolean function,
 $f(W,X,Y,Z)=\Sigma M(2,6,8,9,10,11,15)$
Using tabular method.
3.
 - a) Determine the output frequency for a frequency division circuit that contains 12 flip-flops with an input clock frequency of 20.48MHz
 - b) Write short notes on: Programmable Logic Device (PLD)
OR
 - c) What are the different types of flip flops?
Explain each one in brief with suitable example
4.
 - a) What are the different types of Addressing Modes?
Explain each one in brief with suitable example.
OR
 - b) Write short notes on :Functional unit of a Digital Computer \
5.
 - a) What are the different types of instructions?
Explain each one in brief with suitable example.
OR
 - b) Define the term processor, State the Organization of ARM processor
6.
 - a) Define the term Read only memory .What are the different types of ROM? Explain each one in brief.
OR
 - b) Write short notes on:
 - i) Internal Organization of a memory chip
 - ii) DRAM



1ST SEMESTER

2018

Fill Marks – 70

Time – As In the Programme

SUB-CO

The Figure in the right hand margin indicate marks.

Answer ALL questions

UNIT-I

1. Answer the following short (6)
 - a) What is the smallest unit of representing a binary number is there any limit on the size of a binary number, Give examples?
 - b) Define positional number system?
 - c) Define the radix of a number system . which number system is used for internal data representation?
2. Convert the following into binary and decimal ? (8)
 - a) $(7560)_8$
 - b) $(2652)_8$
 - c) $(fec89)_{18}$
 - d) $AB2B6_{16}$OR
3. Elucidate the term “structure” in computer organization and their functions? (7)
4. Convert the following into ocal and hexadecimal? (7)
 - a) $(1230)_{10}$
 - b) $(5780)_{10}$
 - c) $(1030)_{10}$
 - d) $(01011001101101111111)_2$
 - e) $(111111100001001001)_2$

UNIT-II

1. Name the component, that does the process (execution) work on behalf of the processor? What type of operations are done by the component? What are the other components of a processor that are used during processing. (6)
2. Multiply the following using Booth Algorithm? (8)
 $(-3) \times 2$
 $4 \times (-7)$ OR
3. What is overflow in computer arithmetic of binary number? Why subtraction of Binary numbers is not done using signed magnitude representation ? Perform the following arithmetic
 $-(-9) + 8$
 $-(-23) + (-32)$ (6)
4. Divide -4 by 2 using binary division method? (8)

UNIT-III

1. Answer the following in short (14)
 - a) If ALU, register set and CU form the organization of a processor then what things constitute its architecture?
 - b) What the addressing mode of an Assembly language signify ? Give example for the same?
 - c) Define the speed of a processor?
 - d) Differentiate, Single core processor & Multi core coprocessor, GPU and CPU, Embedded system and a desktop system?OR

1ST SEMESTER

2. State and elucidate Armdhals law?
3. Let we have a progamme of 3 types instruction(7)
Data transfer (3) 2CC
Arithmetic and logical (5) 4CC
Branch instruction (2) 6CC
If each CC takes 1nano escs for a processor,
Then find the total time that the processor will take for executing the above progamme?

UNIT-IV

1. Show why NAND and NOR gates are defined as Universal gates?
2. What purpose do the multiplexers and decoders serve in a computer organization? Draw their logic diagram? Give 1 Application of the multiplexer?
OR
3. Minimize the following Boolean expression using Boolean laws? (7)
 - a) $AB(A+B)(B+B)$
 - b) $(A(A'+B)+(B+AA)(A+B)'$
 - c) $(A+C)(AB'+AC)(A'C+B)'$
4. Draw a PLD that will have 4 memory locations and each location storing 3 bits od data? The following data is to be stored in the respective location (7)

Location	Date
1	011
2	100
3	000
4	111

UNIT-V

1. Write about single bus and multi bus organization used in a processor? (7)
2. Discuss interrupts and their types ?
OR
3. Write all the phases performed for executing an instruction? State when an instruction cycle is interrupted and how the processor handles it (14)



1ST SEMESTER

2018

Computer science SUB- C

Group – A

1. Answer the following Questions. [1 X 10 = 10]

- a) What is variable? Explain the syntax for variable declaration.
- b) What is keyword? Explain with example.
- c) Write a program to find greatest among three numbers using conditional operators.
- d) What is difference between continue & goto?
- e) Explain the difference between structure & union
- f) Write down the output of following codes

```
main()
{
    int c = --2;
    printf("c= %d",c);
}
```

- g) Write down the output of following codes

```
#define square (x) x * x
main()
{
    int l;
    i =64/square(4);
    printf("%d",i);
}
```

- h) Write down the output of following codes

```
main()
{
    int i =5;
    printf("%d%d%d%d%d",l,i++,i--,++l,--i);
}
```

- i) Write down the syntax for different file opening modes with example.
- j) How many types of function argument are available in C? Explain.

Group – B

2. 8

- a) What is operator? Explain different types of operator with example.
- b) Write a program to calculate factorial of a number.

OR

- c) Define the following with example
 - i) Identifier
 - ii) Static
- d) Write a program to swap two variables without using third variable.

3. 8

- a) Write a program to display the lower triangular matrix
- b) Explain the difference types of loops with syntax and example.

OR

1ST SEMESTER

- a) Explain the decision making statements with appropriate examples.
- b) Write a program to check a number is prime or not.

2. 8

- a) Differentiate between call by value & call by address function with example.
- b) What do you mean by recursion? Write a program to display Fibonacci series using recursion.
OR
- c) Write down different components of user defined function with example.
- d) Write a program using function where enter employee name ,age, basic salary and calculate the gross salary where TA, DA,HRA is 2%, 4%, 5% of basic salary respectively.

3. 8

- a) Define pointer. Write a program to add two number using pointer.
- b) Write a C program using pointer and array.
OR
- c) Write a C program to reverse a number using pointer.
- d) Define the followings with example.
 - i) NULL pointer
 - ii) Void pointer

4. 8

- a) What are the different file handling functions available in C. Explain with syntax and example.
- b) Write a program to create a file, store information into it and display the contents.
OR
- c) Write a program to copy the content of one file to another using file handling methods
- d) What is dynamic memory allocation? Explain with example.



1ST SEMESTER

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1ST SEMESTER

2018
ITM SUB- C

1. Answer all the following:

- a. C programming language is also known as modular programming language. Why?
 - b. What is difference between syntax & semantic error?
 - c. What do you mean by reserved word? Name any three reserve words.
 - d. Describe wild pointer in C?
 - e. What is the explanation for prototype function in C?
 - f. What is the process to generate random numbers in C programming language?
 - g. What is the difference between #include“...” And #include<.....>?
 - h. What are dangling pointers? How are dangling pointers difference from memory leaks?
 - i. Find the output:
int x = 43, y =34;
x = x < y;
x = x++ + ++x + ++x + x++;
print (“%d”, x);
 - j. write a program which does the following. It reads integer n repeatedly until n > 0 is satisfied. It then calculates the number of integers between 1 & n that are divisible either by 3 or 8 but not by both.
- 2.
- a. Explain about the different data types in C. write a program to find the greatest and smallest element from an array.
OR
 - b. Which are formatted input output functions? Write a C language program using recursive function to enter 4 digit number and find the sum of all digits of the number.
- 3.
- a. Write a C language program to print all amstrong numbers between 1 to 500.
 - a. Explain details about the different types storage classes in C.
OR
 - b. What is multidimensional array? Write a C language program to enter n elements in array and find second smallest number from an array.
- 4.
- a. What is function in C? explain different components of function.
 - b. Construct a function to calculate factorial of a number where enter the number as argument and return the result to the main function.
OR
 - a. Write a C program where enter the string as “The participants should be given copy” and prints the number of times the alphabet l occurs in the given string.
 - b. Differentiate between break & exit.

1ST SEMESTER

5. a. Write a program to add two string without using standard library function.
b. Write a program for the following:
A
AB
ABC
ABCD
ABCDE
OR
- a. Write a program to reverse a string without using string library function.
b. Write a program for the following:
1
121
12321
1234321
123454321
6. a. What is a file? What are the different file opening modes are used? Explain with a suitable example.
OR
b. Write the short notes: (any TWO)
i. Pointer to pointer with example.
ii. Call by value and call by reference.



1ST SEMESTER

2018

SUB-EVS

BSc. ITM

1. Write the answers of the following questions. [1X10]
- (a) What is deforestation?
 - (b) Define thermal pollution.
 - (c) What is bio purification?
 - (d) What is eutrophication?
 - (e) What are non-renewable resources?
 - (f) Write the different spheres of earth system.
 - (g) What is green industry?
 - (h) What is radioactive pollutant?
 - (i) Define an agricultural waste.
 - (j) Write the role of NGOs.
2. What is biogeochemical cycle? Write the importance of biogeochemical cycle. [14]
- OR
- (a) Write down the components of ecosystem. [7]
 - (b) Trophic level [7]
3. (a) Write notes on carbon cycle and Nitrogen cycle. [7]
- (b) What is pollution? Write down the aspect of water pollution. [7]
- OR
- (a) Write notes on population density, natality rate and mortality. [7]
 - (b) Discuss various aspects of air pollution. [7]
4. Give details on classification of communicable disease according to the nature of pathogen. [14]
- OR
- (a) Discuss various control methods of population. [7]
 - (b) Define urbanization. Write down its effect on the society. [7]
5. Discuss the role of environmental movements in India. [14]
- OR
- (a) Discuss the role of State pollution control board. [7]
 - (b) Discuss the contribution of women in the environmental movements in India. [7]
3. (a) Write down the steps to conserve the wild life. [7]
- (b) Define soil erosion. Discuss its various factors, causes and effects of soil pollution. [7]
- OR
- (a) Elaborate the importance of conservation of natural resource in India. [7]
 - (b) Discuss about the need of environmental protection act. [7]



1ST SEMESTER

2018

SUB-EVS

BSc. Comp. Sc.

1. (a) Define photochemical smog. [2x10=20]
(b) Explain cyclone management.
(c) How does earthquake occurs?
(d) What are the important aspects of sustainable development?
(e) What are the important causes of climate change?
(f) What is Green House Effect?
(g) Define population density?
(h) What is full form of HIV & AIDS?
(i) What are the causes of ozone layer depletion?
(j) Define Immigration.
2. (a) Explain the four spheres of present above earth surface. [6]
(b) Explain nitrogen cycle. [6]
OR
Explain any TWO:
(i) Carbon Cycle
(ii) Ecology
(iii) Ecosystem
3. (a) What is Pollution? Explain causes and effects of Air Pollution. [6]
(b) Explain different type of Natural Disasters and write down methods to manage these situations. [6]
OR
(a) Explain causes and effects of any two Pollutions. [6]
(i) Thermal Pollution
(ii) Noise pollution
(iii) Soil pollution
4. (a) Explain Urbanization and how its affects to the environment? [6]
(b) Define the terms like 'Species' & 'Community'. [6]
OR
Explain different communicable diseases. Also describe its transmission methods and how to control such diseases. [12]
5. (a) Explain different Environmental movements in India and also in Odisha. [12]
OR
(a) Explain followings: [6+6]
(i) Central pollution control board
(ii) Role of women in Environmental Movements
6. (a) What is Natural Resources? Explain different natural resources and why do we need to conserve all these resources. [12]
OR
(b) Explain any TWO: [6+6]
(i) Water Act
(ii) The Wildlife Act
(iii) Environmental Protection



1ST SEMESTER

2019

SUB-EVS

BSc. ITM

1. Write the answer of the flowing questions:
 - (a) Define food chain.
 - (b) Write down the biotic component of an ecosystem.
 - (c) Define the composition of air.
 - (d) Define noise pollution.
 - (e) Define biodiversity.
 - (f) Give two examples of control method of population.
 - (g) Write down the major roles of State Pollution Control Board.
 - (h) What is objective of Chipko movement?
 - (i) What is air pollution?
 - (j) Define wild life management.
2. Write down the structure and function of ecosystem.
OR
Write notes on:
 - (a) Atmosphere
 - (b) Nitrogen cycle
3. Define water pollution. Write down the sources of water pollution. Explain different measures to control water pollution.
OR
Write notes on:
 - (a) Flood and its management
 - (b) Thermal Pollution
4. Define what are communicable diseases? Write down its transmission methods.
OR
Explain the following terms in detail.
 - (a) Urbanization
 - (b) Population Growth Curve
5. Write down the role of Central Pollution Control Board in details.
OR
 - (a) Appiko Movement
 - (b) Role of Women in Environmental Movements
6. Write down the conservation of wild life and discuss its management methods.
OR
 - (a) Wild Life Act
 - (b) Soil Erosion and conservation

1ST SEMESTER

2019

BSc. Comp. Sc.

1. Define each of the following in ONE sentence only. [2X10=20]
 - (i) Ecology
 - (ii) Pollution
 - (iii) Disaster
 - (iv) Disease
 - (v) Urbanization
 - (vi) Nitrogen Cycle
 - (vii) Conservation
 - (viii) Wildlife
 - (ix) Biosphere
 - (x) Atmosphere
2. Give an account of carbon cycle with diagram. [12]

OR

Explain hydrosphere with its importance.
3. Describe the causes and control measures of soil pollution. [12]

OR

Enlist the management during and after cyclone.
4. State the control measures of population. [12]

OR

Give an account of non-communicable diseases.
5. Discuss the role of women in environmental movements. [12]

OR

Mention the role of state Pollution Control Board.
6. Narrate the conservation of wildlife in detail. [12]

OR

Give an account of conservation of forest with its importance.



SEMESTER - II

2ND SEMESTER

2nd Semester-ITM Sub: GE-II (Statistics for Business)
Full Marks-50 Year-2017

Answer all Questions

Section-A

Answer all Questions

[1x10]

1. State merits and demerits of moving average method.
2. What is discrete probability distribution and continuous probability distribution?
3. Define conditional probability.
4. Define Binomial distribution.
5. Define sampling distribution.
6. Differentiate between point estimation and interval estimation.
7. Differentiate between null and alternative hypothesis.
8. What is critical region and accepting region?
9. What is acceptance sampling or product control?
10. State the characteristics of index number.

Section-B

Answer any five questions .Each question carries equal marks.[5x8]

11. (a) What are the chief characteristics of frequency distribution? Write their merits also.
(b) the probability that India wins a cricket match against Pakistan as given to be $1/3$. If India and Pakistan play four matches what is the probability that :
 - (i) Pakistan never wins the match.
 - (ii) Pakistan and India Will win alternatively.
12. (a) Find the standard deviation of the following data:

Class Interval	Frequency
1 – 8	5
9 – 15	10
15 – 21	8
22 – 28	7
28 – 35	4

(b) For any two events E_1 and E_2 , these are compatible, prove that : $P(E_1 + E_2) = P(E_1) + P(E_2) - P(E_1 * E_2)$
13. We randomly select two shirts, one after another, from a carton Containing twelve shirts, three of which have blemishes. Find the probability that
 - (i) Both of them will have blemishes
 - (ii) Both of them will be without blemishes
 - (iii) One will be with blemishes and one without blemishes.
14. (a) Distinguish between parametric test and non-parametric tests.
(b) Discuss the properties of Regression analysis.
15. Define Time series analysis .Discuss its components and also define Least square method of secular trend.
16. (a) A continuous random variable X has a probability density $f(X)$. Find the probability density function $g(Y)$ of the random variable $Y = aX + b$,where a and b are not random.
(b) a random variable X has a probability density $f(X)$. Find the probability Density $g(Y)$ of its inverse $Y = 1/X$.
17. A number of Independent trials are made in each of which an event A may occur with probability p . The trials are terminated as soon as the event A occurs n times ($n > 1$). Find the distribution and the numerical characteristics of the number X of "failures" in which the event A does not occur.



2ND SEMESTER

2nd Semester-ITM, Sub: GE-II(Statistics for Business)
Full Marks-50 Year-2018
Answer all Questions

1.
 - (i) A sample space contains 10 simple events :E1, E2,E10. If $P(E1) = 3P(E2) = 0.45$ and the remaining simple events are equiprobable, find the probabilities of these remaining simple events.
 - (ii) Suppose that $P(A) = 0.4$ and $P(B) = 0.2$. If events A and B are independent, find the probabilities $P(A \cap B)$.
 - (iii) Let X be a binomial random variable with $n = 10$ and $p = 0.4$. Find $P(X \geq 4)$.
 - (iv) Differentiate between point estimation and interval estimation.
 - (v) Define Baye's rule.
 - (vi) what are the different parts of a statistical test of hypothesis?
 - (vii) State central limit theorem.
 - (viii) What is variance ?
 - (ix) If the sample size for each treatment is n_t and if S^2 is based on 12df, find ω where $\alpha = 0.05$ and $K = 4, n_t = 5$.
 - (X) List the characteristics of a multinomial experiment.
2.
 - (a) Explain the various types of theorem of probability.
 - (b) Define an event and explain the various types of events.
 - (c) Three students are playing a card game. They decide to choose the first person to play by each selecting a card from the 52-card deck and looking for the highest card in value and suit. They rank the suits from lowest to highest :clubs, diamonds, hearts and spades.
 - (i) If the card is replaced in the deck after each student chooses, how many possible configurations of the three choices are possible?
 - (ii) How many configurations are there in which each student picks a different card?
 - (iii) What is the probability that all three students pick exactly the same card?
 - (iv) What is the probability that all three students pick different cards?
 - (d) Many companies are now testing prospective employees for drug use. However, opponents claim that this procedure is unfair because the tests themselves are not 100% reliable. Suppose a company uses a test that is 98% accurate. That is, it correctly identifies a person as a drug user or nonuser with probability 0.98 and to reduce the chance of error, each job applicant is required to take two tests. If the outcomes of the two tests on the same person are independent events, what are the probabilities of these events?
 - (i) A nonuser fails both tests.
 - (ii) a drug user is detected (i.e., he or she fails at least one test)
 - (iii) A drug user passes both tests.
3.
 - (a) Suppose a random sample of $n = 25$ observations are selected from a population that is normally distributed with mean equal to 106 and standard deviation equal to 12.
 - (i) Give the mean and standard deviation of the sampling distribution of the sample mean \bar{X} . **(ii) Find the probability that \bar{X} exceeds 110.**
 - (iii) Find the probability that the sample mean deviation from the population mean $\mu = 106$ by more than 4.

- (b) Seeds are often treated with a fungicide for production in poor draining wet environments. In a small scale that prior to a large scale experiment to determine what dilution of the fungicide to apply, five treated seeds and five untreated seeds were planted in clay soil and the number of plants emerging from the treated and untreated seeds were recorded. Suppose the dilution way not effective and only four plants emerged. Let X represents the number of plants that emerged from treated seeds.
- (i) Find the probability that $X=4$;
 - (ii) Find $P(X \leq 3)$
 - (iii) Find $P(2 \leq X \leq 3)$
 - (c) Discuss salient features of the Binomial, Poison and Normal Distribution.
 - (d) Explain the concept of probability distribution. How poison distribution is the limiting form of binomial distribution.
4. (a) A random sample of $n=1000$ observations from a binomial population Produced $X= 279$.
- (i) If your research hypothesis is that p is less than 0.3, what should you choose for your alternate hypothesis?
Your null hypothesis?
 - (ii) What is the critical value that determines the rejection region for your test with $\alpha = 0.05$?
 - (iii) Do the data provide sufficient evidence to indicate that p is less than 0.3?
Use a 5% significance level .
- (b) Describe briefly any three methods of sampling.also, distinguish how stratified sampling is different from cluster sampling.
- (c) Define confidence interval. Explain how it is determined for the mean of a normal population.
5. Write notes on (any two)
- (a) Analysis of variance for linear regression.
 - (b) Least square method.
 - (c) Test of hypothesis.
 - (d) Student's t distribution.



2ND SEMESTER

3rd semester-BCA
Full Marks-70

Sub: GE-III(Stat. & Prob.)
Year-2018

Answer ALL the questions

1. (a) Find the probability that the person selected was 65 years of age, given that the person owned at least five years of wearable sneakers.
(b) Prove that $P(A \cap B) = P(A) \cdot P(B|A)$
 $P(A \cap B) = P(B) \cdot P(A|B)$
OR
(c) A smoke detector System uses two devices A and B. If Smoke is present that it will be detected by device A is 0.95 and by device b is 0.94. ,then find the probability that it will not be detected.
(d) Two people enter in room and their birthdays will be recorded, then find the probability that the two people have a specific pairs of birthdays.
2. (a) Use cumulative binomial table $n=5$ and $p=0.6$ to find the probability that three or more success.
(b) Over a long period of time it has been observed that a professional basketball player can make a free throw on a given trial with probability =0.8. Suppose he shoots for four free throws.
OR
(c) Find $P(X=2)$ for poison random variable with $\mu = 2.2$.
(d) d)Calculate the mean and standard deviation of binomial distribution.
3. (a) Explain the concept of confidence interval Estimation.
(b) Find 99% confidence interval for population mean μ for the values $n=50, X=22.8, S^2 =3.44$.
OR
(c) A random sample of size $n=49$ is selected from a population with mean= $\mu = 53$ and standard deviation is 22.
What will be the approximate shape of the sampling distribution of \bar{X} .
(d) State and explain the concept of large sample estimation.
4. In a comparison of the mean 1-month losses for women aged 20-30 years ,these sample data were obtained for each of two diets. :

	Diet-I	Diet-II
Sample Size(n)	40	40
Sample Mean (\bar{X})	10	8
Sample Variance(S^2)	4.3	5.7

Do the data provide sufficient evidence to indicate that diet I produces a greater mean weight loss than diet-II. ?

OR

Write short notes on :

- (i) Testing of Hypothesis.
- (ii) Student's t distribution.

2ND SEMESTER

5. In order to study the relationship of advertising and capital investment with corporate profits the following data recorded in units of Rs. 100,000, were collected for 10 medium sized firms in the same year. The variable Y represents profit for the year X1 represents capital investment, X2 represents advertising expenditures.

Y	X1	X2
1	20	0
16	12	4
18	15	5
13	6	4
2	16	2

Using the Model $E(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2$ and an appropriate computer software package, find the least squares prediction equation for these data.

OR

Write short notes on :

- (i) Analysis of variance for linear regression.
- (ii) Least square method.



2ND SEMESTER

II-S-BSc.ITM – CBCS - Core-IV-(D.S)
2017

FULL MARK -50

Time As in the Programme

The questions are of equal value

Answer ALL question.

Section – A

Answer all questions.

[1x10]

1. What is Abstract Data Type ?
2. What is time complexity?
3. Write an algorithm to traverse linear arrays?
4. What is double Linked List ?
5. How is stack represented in memory?
6. What is priority queue ?
7. Write an algorithm for pop operation in a stack ?
8. Define degree of a node ?
9. What is the meaning of height of a binary tree?
10. What are the application of stack ?

Section – B

Answer any FIVE question. Each questions carries equal marks.

[5x8]

11. (a) Explain various data structure operations performed on non-primitive data structures.
(b) write a C program to concatenate two strings without using built-in functions.
12. (a) Differentiate between Stack and Queue.
(b) Write a program to implement queue using array.
13. (a) Write a program to insert a node at a particular position in a single Linked List.
(b) Write a program to delete a node from the first position of a circular Linked list.
14. What is the ADT of double linked list? What are the drawbacks of dynamic implementation of linked list?
(b) Write the functional block to represent a polynomial using linked list.
15. (a) Write the ADT and features of stack data structure.
(b) Write a program to implement liner queue operations statically.
16. (a) Define all the component of a Tree. Explain binary Tree.
(b) $(A+B/C)*D \wedge E)+F$ Convert the above infix expression to prefix and postfix from.
17. Write the algorithm of Bubble sort. Evaluate the algorithm.



2ND SEMESTER

II-S-B.SC. (H)-Comp.Sc.- Core – CC – (D.S) –R & B
2018

Full Marks-50

Time-As in the programme

The figure in the right hand margin indicate marks
Answer ALL questions.

GROUP-A

1. (a) Explain the physical implementation of Binary Tree. [1x10]
(b) What is Buddy System?
(c) Classify Data Structure.
(d) What is Heap Tree ?
(e) Evaluate the postfix expression 5,4,6,+,* ,4,9,3,/ ,+,*.
(f) Write down the application of linked lists.
(g) Define Double Circular Linked Lists.
(h) What do you mean by Expression Tree?
(i) Write down the applications of Stack.
(j) Define Array.

GROUP-B

2. (a) What is Multi-Dimensional Array ? Write a program to enter a 3x3 matrix and display the lower triangular matrix. [8]
OR
(a) Write a program to multiply two 3x3 matrices. [8]
3. (a) Perform the following operations in a Single Linked List. [8]
(i) Add a node at the beginning of the list.
(ii) Delete a node from a particular Position.
OR
(a) Perform the following operations in a Circular Linked List. [8]
(i) Add a node at the a particular position of the list.
(ii) Count total no of nodes present in the list.
4. (a) What is Stack ? Perform the push , Pop and Traverse Operation. [6]
(b) Find out postfix from of the expression $(A+B)*(C*D-E)*F/G$.
OR
(a) What is Recursion? Write a program to calculate factorial of a no using Recursion. [6]
(b) Explain Quick sort with example. [2]
5. (a) What is Queue? Write algorithms to add and delete element from a queue using Link List Representation. [8]
OR
(a) Explain any two example. [4x2]
(i) Dequeue (ii) Priority Queue
(iii) Application of Queue
6. (a) Explain any two with example. [4x2]
(i) Binary Search Tree (ii) Weighted Binary Tree
(iii) Decision Tree
OR
(a) Define Linked List representation of a Binary Tree.
(b) Explain Insertion, Deletion, Traversal Operation on Binary Tree.



2ND SEMESTER

II-S-B.SC. (ITM) Core – V – (D.S)
2019

Full Marks-80

Time-As in the programme

The figure in the right hand margin indicate marks

Answer ALL questions.

1. Write the answer of the following questions. [2x5]
 - (a) How to calculate degree of a node ? Explain it with example.
 - (b) What is the postfix operation of $(A*B+C) - (D/E)$?
 - (c) How to define the structure of double linked list to store the data ?
 - (d) How a binary tree is called threaded binary tree ?
 - (e) What is Compaction ?
2. Explain different types of data structure with examples. [8]

OR

 - (a) write a program to add two different 3-dimensional matrix. [4]
 - (b) Define Pointer. Explain its advantages over array ? Write an example how a set of elements are manipulated with pointer.
3.
 - (a) What is deallocation? How such strategy applied in data structure. [4]
 - (b) Explain boundary tag system in details. [4]

OR

Write insertion, first-insert, last-insert and deletion algorithm of linked list.
4.
 - (a) How arithmetic expressions are evaluated using stack ? Explain it with example.
 - (b) Explain linked representation of stack with an example.

OR

Write down push & pop algorithms and various applications of stack. [8]
5.
 - (a) Define queue. How it is represented? Explain inserting and deleting algorithm in a queue. [6]
 - (b) Discuss various applications of queue. [2]

OR

 - (a) Explain how priority queue used in Round Robin Scheduling.
 - (b) Write down the algorithms used for insertion and deletion in deque? [4]
6.
 - (a) Explain pre-order, in-order and post-order tree traversal with their algorithms and example. [8]

OR

 - (a) Draw the B-tree of order 5 using following keys.
65,71,70,66,75,68,72,77,74,69,83,73,82,88,67,76,78,84,85,80. [4]
 - (b) Write an algorithm to store data in a tree. [4]



2ND SEMESTER

II-S-B.SC. (H)-Comp.Sc.- Core – IV – (D.S) –R & B
2019

Full Marks-50

Time-As in the programme

The figure in the right hand margin indicate marks
Answer ALL questions.

GROUP-A

(Answer all Questions, Each carries 1 mark)

1. (I) Define the term NonLinear Data Structure.
- (ii) Differentiate between double Linked list and single Linked list.
- (iii) Differentiate runtime and compile time initialization of an array.
- (iv) State the syntax of 2D array declaration.
- (v) What is postfix notation of the expression $(c/d) * (a+d)$?
- (vi) Define height of a tree.
- (vii) State two properties of Height Balanced Tree.
- (viii) Construct a binary search tree using the following key values.
11,22,67,89,21,9,56.
- (ix) Define the term Dequeue.
- (X) State two applications of Array.

GROUP-B

(Answer all questions. Each carries 8 marks.)

2. (a) What are the different types of data structures ? Explain each one in brief.
OR
- (b) Write a C Program to display the result of addition of two 3*3 matrix using array
3. (a) Write an algorithm to delete node from a double linked list.
OR
- (b) Write an algorithm to insert a node after a given node of a single linked list.
4. (a) What do you mean by Stack. What are the different types of stack operation. Write a program to perform each operation on a stack.
OR
- Define Recursion. Write a program to calculate factorial of a number.
5. (a) Write an algorithm to delete an element at the end of a queue.
OR
- (b) Write an algorithm to delete an element from the beginning of a queue.
6. (a) Explain the concept of physical implementation of binary tree in memory.
OR
- (b) Construct a balanced binary search tree using the following nodes
jan,feb,mar,apr,may,jun,jul,aug,sep,oct,nov,dec.



2ND SEMESTER

II – S – BCA – III – (OOPUC++) – NC

2020

FULL MARKS – 70

Time – As in the Programme

The questions are of equal value

Answer ALL the questions

1. (a) Write the characteristics of OOP.
(b) Write C++ code for following description of the class “circle” AC++ class named “circle and its radius as three floating points numbers. Overload >> operator to input the radius and center point by the user Also overload == operator which will check whether two circles are identical or not (Two circles are identical if their radius is same.).
The class should have the display function to display the center & radius .
OR
(a) Specify the principle of dynamic memory management operators. WAP to find the largest number from n numbers using those operators.
(b) WAP to print the pattern by entering the range. E.g.if range=5 then following pattern will come as output:

```
A
AB
ABC
ABCD
ABCDE
```
2. (a) Take a class “meter” having only one data member to hold a length inputted in metre and centimetre. Then take a class “feet”. It is also having data member to hold a length inputted in feet & inches. Take a function convert _ and _ add () to convert the feet & inches into metre & cm. And add the result to the metre & cm.Value you have inputted through member function of respective classes. Write suitable friend function for both classes to calculate the above task and member functions to input the value & display the result.
(b) WAP to overload swap function to exchange values of two different classes using friend function. Write appropriate member functions for input and display and friend function.
2. (a) Take a class “meter” having only one data member to hold a length inputted in metre and centimetre. Then take a class “feet”. It is also having data member to hold a length inputted in feet & inches. Take a function convert _ and _ add () to convert the feet & inches into metre & cm. And add the result to the metre & cm. Value you have inputted through member function of respective classes. Write suitable friend function for both classes to calculate the above task and member functions to input the value & display the result.
(b) WAP to overload swap function to exchange values of two different classes using friend function. Write appropriate member functions for input and display and friend function.
OR
(a) write a program that contains of two classes Time 12 and Time 24. The first one maintains time on a 12 hour basis. Use a friend function convert () object which will convert the object of time 24 into the object of Time12. Each class should have the data member's hour min & sec. Also each class should contain the member function to initialize their data members and functions to display the resultant Time.
(c) Differentiate between function overloading vs. Function Overriding.
3. (a) Briefly explain the functionalities of constructors. Write suitable examples for each type.
(b) WAP to find subtraction of two complex number objects by passing objects as parameter to the member function and return by object from function definition. Write required member functions for input, calculation and display.

2ND SEMESTER

OR

- (a) Declare a class student with following data members: Name , Roll No., Branch & Marks it should contain marks in Phy, Chem & Math). It has also the following member functions:
- (i) To input the details of a student
 - (ii) To find the total marks & average marks
 - (iii) To display the student report Write the complet program by using the concept of array of objects & implement the above class for five students.
- (b) Implement a class time having 3 members hour, minute & second. One constructor should initialize them to 0. Another constructor should initialize them to fixed values. A member function should display it in hh:mm:ss format. Another member function should add to objects of type time passed as argument. The main function should create two initialized time object and one that is not initialized. Then both time objects should be added and stored in third object. Finally result of third object should be displayed.
4. (a) Create an abstract base class "Shape". Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes triangle & rectangle from base class "Shape". Add to the base class a member function get_data () to initialize base class data member function display_area () as a virtual function & redefine this function in the drived classes to suit their requirement. Using these classes, design a program, which will accept dimensions of a triangle or a reatangle & display the area.
- (b) Write down the advantage of virtual base class with suitable example.
- OR
- (a) Define two classes Distance having data members metre, cm and Distance2 having data members foot, inch. Use conversion routines to convert the object of Distance class into the object of Distance2 class object & vice-versa.
- (b) Write down different types of inheritance with examples.
5. (a) write down different mode of opening of file with syntax.
- (b) Write a program to copy the content of a file into another.
- OR
- (a) write a program to read a binary file and check how many odd and even numbers are present in the file. Write separately into different files i.e. odd numbers to "ODD" FILEAND EVEN TO "EVEN" file respectively.
- (b) Write a program to print the content of a file in reverse order.



2ND SEMESTER

II-S-BSc.-ITM- PUC++ - P- Core-V
2020

Full Marks-50

Time-As in the Programme

The figure in the right-hand margin indicate marks.

Answer ALL questions.

1. Write the answer of the following questions. [2x5]
 - (a) What is implicit conversion? Explain it with example.
 - (b) What are the advantages of inheritance?
 - (c) Differentiate between static and dynamic binding.
 - (d) Define data abstraction with example.
 - (e) How to make a function inline, explain it.
2. Define OPP. Discuss the basic concepts, benefits and applications of OOPs. [8]

OR

Write short notes.
 - (a) Derived data type. [4]
 - (b) Scope Resolution Operator [4]
3.
 - (a) Explain function overloading with example. [4]
 - (b) Discuss function overloading with example. [4]
 - (c) Describe inline function in C++ with example. [4]
 - (d) Explain call by reference with example. [4]

OR
4. Explain use of constructor in C++. Discuss type of constructors with example. [8]

OR

 - (a) Discuss the advantages of operator overloading. Explain it with example. [4]
 - (b) Define type conversion with example. [4]
5. Discuss various types of inheritance with example. [8]

OR

Explain with example. [8]
 - (a) Pure virtual function
 - (b) Polymorphism
6. Write a database program to store student roll no., name, course name and fees paid in a data file and read it.

OR

Write notes on. [8]
 - (a) Managing output with manipulators.
 - (b) Command line argument.

2ND SEMESTER

2017-B.sc-(ITM)-CBCS

SECTION – A

ANSWER ALL THE QUESTIONS

[1*10]

1. Differentiate between class and objects.
2. Why do we require const qualifiers ?
3. Explain the characteristics of oops.
4. Explain functions with arguments.
5. Write down the characteristics of a destructor.
6. Explain array of object with example.
7. Write any three rules for operator overloading.
8. Explain protected visibility specifier.
9. Write friend function ?
10. What is templates ?

SECTION – B

Answer any five questions. Each question carries equal marks.

[5*8]

11. Write a C++ program to perform multiplication of two matrices.
12. Write a C++ program to create student report using inheritance technique.
13. (a) Write a C++ program to add two complex numbers using binary operator overloading.
(b) Explain the concept of static member of a class with examples.
14. (a) List the characteristics of a constructor. Also explain the different types of constructors.
(b) Write a C++ program to illustrate the concept of constructor overloading.
15. (a) Write a C++ program to swap elements using templates.
(b) What is exception handling? Exceptions how does it differ from error ?
Explain the different blocks in exception handling mechanism.
16. (a) Explain different ways to open file.
(b) Explain file pointers seek () and tellg () functions.



2ND SEMESTER

Bsc (H) - Comp. Sc (C++)
2018

Full Marks-50
Group-A

1. (a) What is friend function? [1*10]
(b) Define Static Variable.
(c) What do you mean by formatted console I/O operations?
(d) What is function prototyping?
(e) Classify data types in C++.
(f) What is the use of Scope Resolution Operator?
(g) What is pointer?
(h) What do you mean by keywords?
(i) Differentiate between while and do while loop.
(j) Define Identifiers.

Group-B

2. (a) What is operatoroverloading? Write a program to add two Complexno using binary + operator overloading. [8]
OR
(b) Explain the control Structure used in C++.Write a C++ [8 program whereenter marks of five subjects and display the grades of the students according to his percentage.
- | PERCENTAGE | GRADE |
|------------|-------|
| >=80 | S |
| 79 to 60 | A |
| 59 to 40 | B |
| <39 | Fail |
3. (a) What is Inline function? Explain with example. [4]
(b) Write programs to swap two number using call by value and call by reference with output. [4]
OR
(a) Write a program to program to perform following operation using function Overloading. [8]
(I) Reverse a number
(II) Area of triangle
(III) Greatest among three numbers
4. (a) What is constructor? Explain different types of constructors with examples. [6]
(b) What do you mean by type Conversion? [2]
OR
(a) Define Array and its types. Write a program to check whether a 3*3 matrix is symmetric or not? [6]
(b) What do you mean by Destructor? Explain with example. [2]
5. (a) Explain any two with example. [4*2]
(I) Multiple Inheritances
(II) Abstract Classes
(III) This pointer
OR
(a) What is virtual function? Explain with example. [4]
(b) What do you mean by nesting of classes. [4]
6. (a) Explain opening and closing of a file with example. [4]
(b) What is Command line Argument? [4]
OR
(a) How to handle Errors during File Operations. [4]
(b) What do you mean by C++ Stream classes. [4]

2ND SEMESTER

2018 (C++)
FULL MARK-50

1. ANSWER ALL. [1x10]
- (a) What is static member function ?
 - (b) Write the mechanism of achieving run time polymorphism.
 - (c) What do you mean by pure virtual function in C++ ?
 - (d) Define implicit type conversation in C++ ?
 - (e) What is use of this pointer in C++ ?
 - (f) List some of the rules for operator overloading.
 - (g) Define virtual base class.
 - (h) Define data abstraction.
 - (i) Define Token.What are the tokens used in C++?
 - (j) What is called by reference?
2. (a) Explain the basic concept of object-oriented programming . [4]
(b) Explain Nested classes and local classes with an example. [4]
OR
(c) Discuss the classification of data types available in C++. [4]
(d) Write a program in C++ that checks whether the given string is palindrome or not. [4]
3. (a) Explain the features of new and delete operator discuss with example . [4]
(b) Explain briefly about function overloading with a suitable example. [4]
OR
(c) Write a program to explain the concept of array of objects. [4]
(d) Discuss about access specifier. Write about declaring member function inside band outside a class. [4]
4. What is constructor? Explain the concept of constructor overloading.Create a class price with data members as rupee and paisa. Using parameterized and copy constructor, Write a program in C++ to add two price objects and display results. [8]
OR
(a) Which operators cannot be overloaded? Write steps to overload + operator so that it can add two complex numbers. [4]
(b) What is a friend function? Why is it required? Explain with an example. [4]
5. What is polymorphism ? How can we achieve runtime and compile time polymorphism in C++to demonstrate run time polymorphism. [8]
OR
What is Inheritance? Discuss the different forms of inheritance supported by C++ with examples. [8]
6. (a) Explain C++ stream classes. [4]
(b) What is manipulator? Difference between manipulators and iosfunctions? [4]
OR
(c) Explain the different modes of opening a file in C++ with examples. [4]
(d) Explain Formatted I/O. [4]



2ND SEMESTER

B.Sc. (ITM) (C++)
2019

Full marks-50

1. Write the answer of following questions. [1x10]
- What is the use of parameterized constructor?
 - When a function is called as pure virtual function?
 - What is the need of copy constructor?
 - Define user defined data type.
 - How explicit conversion used to change the data type?
 - what is the use of this pointer?
 - Explain dereferencing operator with example.
 - What is symbolic constant?
 - What is friend function?
 - What is the use of this pointer?
2. Explain different types of control structure used in C++ with example.[8]
OR
Write short notes:
- Benefits & Application of OPPs. [4]
 - Memory Management Operator. [4]
3. (a) Write a C++ Program to input data for employee code, name & department and print it using class and object. [4]
(b) Discuss the situations where the inline function is used. [4]
OR
(c) Describe inline function in C++ with example. [4]
(d) What is private member function? How it is different from public member function? Explain it with example. [4]
4. (a) How unary operator is overloaded? Explain it with example. [4]
(b) Discuss various rules used to defined constructor in a class. [4]
OR
(c) Write a C++ program to accept two different strings and add it without using library function. [4]
(d) Define destructor. How destructor used in C++ to release the memory space, explain it with example. [4]
5. Explain the following inheritance with example. [8]
I. Multilevel Inheritance.
II. Multiple Inheritance.
III. Hybrid Inheritance.
IV. Hierarchical Inheritance.
OR
a) Define Polymorphism. Discuss its advantages.
b) Write a C++ program to input the time taken by a person to cover the distance in Bicycle and Bus. Calculate total time to cover the total distance. [8]
6. Explain the following terms with example. [8]
(a) Stream classes.
(b) Error Handling in file operation.
OR
Write a database program to keep the train number, name, starting location and destination location in a data file "train" and read it. [8]



2ND SEMESTER

3rd semester-ITM

Sub: GE-III(NT)

Full Marks-50

Year-2018

Answer all questions from Section-A
and any 5 questions from section-B

1.
 - a) What is the decimal equivalent of 4-digit greatest binary integer?
 - b) If $X=0.5000 \times 10^2$ is approximated by $X^*=0.5100 \times 10^2$. Find the Absolute error and Relative error.
 - c) Evaluate $\tan^{-1} X$
 - d) Find an analytical expression for $n(2X)$
 - e) Define composite Trapezoidal Rule.
 - f) Define Simpson's 1/3 Rule.
 - g) Define upper Triangular matrix.
 - h) Determine the Eigen values for the following matrix. $A=$
 - i) write Runge-Kutta method of order four.
 - j) Approximate $f(X) = \sin X$, for $X=0.1$ by a second degree Taylor Polynomial.
- Group-B**
2.
 - a) Find a real root of the equation $X^3 - X - 1 = 0$ correct up to two significant digits using Bi-Section method.
 - b) Find a real root of $X^3 - 2X - 5 = 0$ by regular falsi method correct up to two decimal places.

OR

 - c) Derive the rate of convergence of Newton Raphson method.
 - d) Obtain a root of the equation $X^3 - 4X - 9 = 0$ correct up to three decimal places using Secant method.
3.
 - a) Find the interpolating polynomial for the following data
 $f(-1)=-2$, $f(0)=-1$ and $f(1)=4$.
 - b) Use Lagrange's interpolation formula to find $f(X)$ when $X=0$, given the table:

X:	-1	-2	2	4
f(X)	-1	-9	11	69

OR

 - c) Find the unique polynomial of degree 2 such that $f(0)=1$, $f(1)=3$, $f(3)=55$, using Newton Divided difference table.
 - d) Approximate $f(X) = e^x$ by a fifth degree Taylor polynomial in X , for $X=1.2$
4.
 - a) Solve by Gauss Elimination method :
 $X+3Y+2Z=5$
 $2X-y+Z=-1$
 $X + 2y + 3Z= 2$
 - b) Solve the following System by of Linear equations by Gauss-Seidel method starting with initial guess.
 $X_1=0, X_2=0, X_3=0$
 $10X_1 + X_2 + X_3 = 12$
 $X_1 + 10X_2 + X_3 = 12$
 $X_1 + X_2 + 10 X_3 = 12$

OR

 - c) Solve the following system by Gauss –Jordan method
 $2X+2Y+4Z= 18$
 $X+3Y + 2Z= 13$
 $3X+Y+3Z = 14$

2ND SEMESTER

- d) Determine the Eigen values and the corresponding eigen spaces for the following matrices.
 $dY/dX = Y - X + 1$, $Y(0) = 1$
A =
5. a) Find the approximation to $Y(0.4)$ using Taylor method of order Two with $h = 0.2$ for the initial value problem. [4x2=8]
 $dY/dX = Y - X + 1$, $Y(0) = 1$
- b) Solve $dY/dX = Y - X$, $X = 0$, $Y = 2$ by Runge-Kutta method of order 2 choosing $h = 0.1$ for $Y(0.1)$
OR
- c) Solve $dY/dX = 1 - Y$, $Y(0) = 0$, numerically by Runge-Kutta method of order four with $h = 0.1$ for $X = 0.1$.
- d) Use the Euler's method to solve numerically the initial value problem $dY/dX = -2XY^2$, $Y(0) = 1$, with $h = 0.2$, on $[0, 1]$.
6. Write short notes on :
- (a) Runge -Kutta method of order 4.
(b) Adam's -Basforth -Moultan method.
OR
- (c) Given $dY/dX = (Y - X)/(Y + X)$, with $Y = 1$ for $X = 0$. Find approximately for $X = 0.1$ by Euler's method.
- (d) If $f(X) = 1/X$, then show that $f(a, b, c, d) = 1/abcd$.



2ND SEMESTER

3rd semester-ITM
Full Marks-50

Sub: GE-III(NT)
Year-2019

Section-A is compulsory
Answer any FIVE from section-B

Section-A

1. Answer the following questions. [2x5]
- What is loss of significance?
 - Define interpolation.
 - What is geometrical interpolation of Secant method?
 - What is Pivoting?
 - Define one point Gaussian Quadrature formulae.

Section-B

2. Find approximately the root of the equation $X^3 - 8X - 4 = 0$ lying in the interval [3,4] by using Newton-Raphson method.

OR

Find by Newton Raphson method the real root of the equation $3X - \cos X = 1$ which lies between -1 and 1 .

3. Construct the Newton's difference table for the following data.

X: -1 0 2 5
f: -11 -5 -5 55

Hence find the interpolating polynomial for the above data and also interpolate $f(1)$. [8]

Hence find the interpolating polynomial for the above data and also interpolate $f(1)$. [8]

OR

Use a 3rd degree Newton's divided difference formula to evaluate $\log 2.25$. [8]

X	log X
1.0	0
1.5	0.17609
2.0	0.30103
2.5	0.39794

4. The velocity V (km/min) of a moped which starts from rest is given at fixed intervals of time t (min) as follows:

t	V
2	10
4	18
6	25
8	29
10	32
12	20
14	11
16	5
18	2
20	0

Estimate approximately the distance covered in 20 minutes using Simpson's 1/3 Rule.

OR

2ND SEMESTER

Evaluate the integral $\int_0^1 \frac{1}{1+X} dX$ by compound Trapezoidal Rule With 6 equal subintervals. [8]

5. Solve the following system of equation by Gauss elimination method [8]

$$2X + 3Y + Z = 9$$

$$X + 2Y + 3Z = 6$$

$$3X + Y + 2Z = 8$$

OR

- Solve the system of linear equations by Jacobi iteration method . [8]

$$5X_1 - X_2 + 0 \cdot X_3 = 9$$

$$-X_1 + 5X_2 - X_3 = 4$$

$$0 \cdot X_1 - X_2 + 5X_3 = -6$$

6. Use Runge-Kutta method of order four, solve $dY/dX = 1/10(X^2 + Y^2)$, $Y(0) = 1$ for $0 \leq X \leq 0.3$, choose $h = 0.1$. [8]

OR

Find the least square quadratic polynomial $Y = a_0 + a_1X + a_2X^2$ for $f(X) = \sin \pi X$ on the interval $[0, 1]$. [8]



2ND SEMESTER

I-S-B.Sc.-(ITM)-CBCS-AECC-I-(C.English)-R & B
2018

Full Marks -80

Time-As in the Programme

The figure in the right hand margin indicates marks.

Section-A

Answer all questions.

[1x20]

1. Fill in the blanks of the following sentences choosing appropriate alternatives.
 - (i) One of the chairs _____ broken.
(a) is (b) are (c) have (d) does
 - (ii) Neither you nor he _____ willing to come.
(a) were (b) does (c) has (d) was
 - (iii) No one _____ to be criticized.
(a) like (b) liking (c) likes (d) link
 - (iv) A man as well as his Friends _____ ready to jump.
(a) was (b) have (c) has (d) were
 - (v) Every day and every night _____ its own pleasures.
(a) bring (b) brought (c) brings (d) bringing
2. The passive form of "The people in South India eat Sun-boiled Rice" is _____.
 - (ii) The passive form of "The barber cut my hair" is _____.
 - (iii) The passive form of "Sarita has typed the Letter" is _____.
 - (iv) The passive form of "Nitin beat the dog hard" is _____.
 - (v) The passive form of "The police are investigating the cases" _____.
3. Make sentences :
Abide by, abstain from, Coincide with, Comply with, deficient in, Freedom from, proficient in, Rejoice at, Weary of, yield to.

Section – B

Answer any SIX:

[6X10]

1. Draft a letter to be sent to the local government offices and business houses for promoting the sale of a newly designed steel cabinet your firm has just introduced in the market.
2. As the Librarian of your organization write a letter claiming compensation for 39 books which arrived in damaged condition.
3. Discuss the barriers to effective written communication. Illustrate your answer with examples.
4. Make sentences using the following pairs of words.
 - (a) Principal, Principle
 - (b) Council, Counsel
 - (c) Write, Right
 - (d) Accept, Except
5. Write short notes on:
 - (i) Horizontal Communication.
 - (ii) Vertical Communication.
 - (iii) Interpersonal Communication.
 - (iv) Grapevine Communication.
6.
 - (a) What is creative writing? How to write a business letter?
 - (b) Discuss the importance of Reading skills with suitable example.
7. What do you mean by information transfer? How to interview for the newspapers.
8. (a) Assuming yourself to be the head of the Electronic department of Your institution, write a report of trouble on the fire caused in the Laboratory in Your department. Invent details.



2ND SEMESTER

2019 Computer Science SUB- C

1. Answer all questions. Each carries 1 mark.
 - a. What is the difference between call by value & call by reference.
 - b. How do you construct an increment statement or decrement statement in C.
 - c. What is difference between the = symbol and == symbol?
 - d. How do you declare a variable that will hold string values.
 - e. What are header files and what are its uses in C programming.
 - f. What is syntax error.
 - g. What are variables and it what why is it different from constants.
 - h. When is the "void" keyword used in a function?
 - i. What is wrong in this statement? `scanf("%d",whatnumber);`
 - j. What does the & operator do in a program code?
 2. Answer all question. Each carries 8 marks)
 - a. Explain the steps to execute a C program under any operating system.
 - b. Difference between variables and constants. What are the different types variables used in C programming.
OR
 - c. What are the difference types of operators used in C Programming? Explain each one.
 - d. Write a C program to check whether a no is even or odd.
 3. a. Write C programme using loop statement that will show the following output.
1
12
123
1234
12345
OR
 - a. Write a C Programming to implement the following vanderwaal's equation.
 $RT = (P + a/v)(v - b)$
2. a. What is the general from of function in C?
b. Write a C programme to add two 3 x 3 matrix?
OR
 - c. Explain the use of function toupper () with an example code?
d. Differentiate between structure and union.
3. a. What is a pointer on pointer in C programming language?
b. Write a C programme to swap two numbers using pointer
OR

Write short notes on:

- i. Array of pointers
- ii. Pointer as function argument

4. a. Write a C programme to insert a record into an already existing file.
b. Write a C programme to create a new file.
OR

Write short notes on:

- i. Dynamic memory allocation
- ii. I/O operations of file.

2ND SEMESTER

III - S- B.Sc.-(ITM) - CBCS - VIII - (ME)
2018

Full Marks - 80

Time : As in the programme

The figure in the right hand margin indicate marks.

Answer all questions from Section - A and any 5 questions from Section - B

Section-A

1. Answer all the questions. [2*10]
- What do you mean by cardinal utility?
 - What do you mean by giffen goods?
 - What is law of demand?
 - What do you mean by veblen goods?
 - Define opportunity cost.
 - What do you mean by Marginal rate of technical substitution?
 - What is market price?
 - Explain price elasticity of demand.
 - Define market supply of labor.
 - What do you mean by excess capacity of a firm.

Section - B

- Answer any FIVE: [12*5]
- Why is the market demand curve usually less elastic than demand curve faced by the individual firms in the market.
 - What do you mean by price Elasticity of demand? Discuss different types of price Elasticity of demand.
 - State and explain short run production function.
 - Write the demand equation for which the price elasticity for all demand is zero.
 - What do you mean by price discrimination? How price and output are determined under discriminating monopoly.
 - State and explain marginal productivity theory of distribution.
 - Explain the law of diminishing marginal effect.

III - S- B.Sc.-(ITM) - CBCS - VIII - (ME)



SEMESTER - III

3RD SEMESTER

2017-B.sc-(ITM)-CBCS SECTION – A

ANSWER ALL THE QUESTIONS

[1*10]

1. Differentiate between class and objects.
2. Why do we require const qualifiers?
3. Explain the characteristics of oops.
4. Explain functions with arguments.
5. Write down the characteristics of a destructor.
6. Explain array of object with example.
7. Write any three rules for operator overloading.
8. Explain protected visibility specifier.
9. Write friend function?
10. What is templates?

SECTION – B

Answer any five questions. Each question carries equal marks.

[5*8]

11. Write a C++ program to perform multiplication of two matrices.
12. Write a C++ program to create student report using inheritance technique.
13. (a) Write a C++ program to add two complex numbers using binary operator overloading.
(b) Explain the concept of static member of a class with examples.
14. (a) List the characteristics of a constructor. Also explain the different types of constructors.
(b) Write a C++ program to illustrate the concept of constructor overloading.
15. (a) Write a C++ program to swap elements using templates.
(b) What is exception handling? Exceptions how does it differ from error? Explain the different blocks in exception handling mechanism.
16. (a) Explain different ways to open file.
(b) Explain file pointers seek () and tellg () functions.



3RD SEMESTER

2020

Fill Marks – 50

Time – As In the programme

SUB- CO

The Figure in the right hand margin indicate marks.

Answer ALL questions.

Group-A

1. (Answer all questions. Each carries 1 marks)
 - (i) What is the simplified SOP (Sum of Product) form of the Boolean expression $(P + Q' + R) \cdot (P + Q' + R) \cdot (P + Q + R')$
 - (ii) What is the minterm expansion of $f(P, Q, R) = PQ + QR' + PR$
 - (iii) In what technology, the implementation of the register file is by using an array of memory locations.
 - (iv) In a three BUS architecture, how many input and output ports are there?
 - (v) For a 3 BUS architecture, is the below code correct for adding three numbers?
P Court, R=B, Marin, Read, Inc PC
WMFC
MDRout, R=B, IRin
R4outa, R5outb, Select A, ADD, R6in, End
 - (vi) What is the main advantage of multiple bus organization over a single bus?
 - (vii) What is the minimum time delay between two successive memory read operations?
 - (viii) VLSI stands for what?
 - (ix) The cells in a row are connected to a common line called what?
 - (x) Differentiate between arithmetic and logic instruction?

Group-B

2. (Answer all questions. Each carries 8 marks)
 - (a) Simplify SOP (Sum of Product) from of the Boolean expression.
 $(P' + Q' + R')$. $(P + Q' + R)$. $(P + Q + R')$
 - (b) Explain the concept of K-Map.
OR
 - (c) State the functionalities of any two logic gates.
 - (d) Discuss some characteristic of different number system.
3.
 - (a) What is PLD ? State he important characteristics of PLD.
 - (b) State the various approaches used for performing I/O. What role an I/O module plays while performing I/O.
OR
 - (c) What steps a processor take, when a interrupt occurs.
 - (d) State the characteristics of CPLD.
4.
 - (a) State the architecture of digital computer.
 - (b) Explain the functions of processor.
OR
 - (c) What is Addressing Mode ?
What types of addressing mode are supported in computer architecture and their characteristics ?

3RD SEMESTER

5. (a) Discuss the structure of register.
(b) Define the term instruction. State the characteristics of different instructions?
OR
(c) Discuss the following.
» Basic I/O Operation
» Load and Store Instructions
(d) State the types of registers used in a processor.
6. (a) Give a brief classification of ROM.
(b) What is cache memory ? Give examples of some solution to cache coherence.
OR
(c) Write down the major feature of DRAM.
(d) State the parameters using which the performance of a Hard Disk is measured.



3RD SEMESTER

2019

Fill Marks – 50

Time – As In the Programme

SUB- CO

The Figure in the right hand margin indicate marks.
(Section A is compulsory. Answer any Five from Section B).

SECTION-A

1. Answer the following questions. [2×5]
- (a) Differentiate between Computer Organization and Computer Architecture ?
 - (b) What is Amdahl's Law ?
 - (c) What are the stages of an instruction cycle ?
 - (d) What are basic elements of floating-point notation ?
 - (e) What is the distinction between spatial locality and temporal locality ?

Section - B

2. (a) Explain the basic structures of a computer system [8×5]
(b) Express the Boolean function in to its equivalent canonical sum of product form (SOP).
F :
3. (a) Use the Booth algorithm to multiply – 5 (multiplicand) by 4 (multiplier)
(b) Differentiate single core processor and multicore processor, GPU and CPU, Embedded system and Desktop system.
4. (a) Minimize the logical expression using 4 variable K- Map
5. (a) Describe PAL and FPGAs.
(a) What different types of Flip-flops (JK flip-flop, D-Flip-Flops and T Flip-flop).
(b) What is overflow in computer arithmetic of binary numbers ? Why subtraction of binary numbers is not done using sign magnitude representation ?
6. (a) Design 8 to 1 multiplexer and 1 3 × 8 decoders ?
(b) Determine the effective CPI, MIPS rate and executing time of a program is run on a 40MHz processor. The executed program consists of 1,00,000 instruction Execution with the following instruction mix and clock cycle count.

Instruction type	Instruction count	Cycle per instruction
Integer Arithmetic	45000	1
Data transfer	32000	2
Floating point	15000	2
Control transfer	8000	2

7. (a) Explain different types of instruction format of ARM processor.
(b) Explain the IEEE 754. Standard for floating point operation.
8. (a) Write about single bus and multibus organization used in a processor.
(b) Discuss interrupts and their types.



3RD SEMESTER

2018

Fill Marks – 50

Time – As In the Programme

The Figure in the right hand margin indicate marks.

SUB- CO

SECTION-A

1. Answer the following margin indicate marks (1x10=10)
- In computers, subtractions generally carried out by which method?
 - What is flip-flop?
 - What is waiting time?
 - What is the use of Program counter Register?
 - What is process state?
 - What do you mean by write back?
 - Which method is used for resolving data dependency conflict by the compiler itself.?
 - How many 128x8 RAM chips are needed to provide a memory capacity of 1024 bytes?
 - Which logic gate is known as universal logic gate?
 - Excess-3 equivalent representation of (1234)₁₀ is _____

Group-B

2. a) Explain the different number system with example?
b) Convert these numbers to decimal
I) (101001)₂ ii) (172)₈ iii) (1a4)₁₆ IV) (A1F)₁₆
OR
a) Draw different Logic Gates with their Truth Tables
b) Simplify the Boolean function F.
F(A,B,C,D)-M(1,3,4,7,9,10,11,12,15)
3. a) Explain following two flip-flops
I) SR Flip-flop ii) jk Flip-flop
b) What is Register Transfer Notation?
OR
a) Explain the following terms
I) Decoder ii) PLDs iii) CPLDs iv) fpga
4. a) Explain the Basic structure of computer with input output units
b) Explain different Addressing Modes with examples.
OR
Define the following
I) Relative Addressin ii) Direct Addressing
iii) Byte Addressability iv) Resister Addressing
5. Explain any Two for ARM Processor
I) LogicInstruction ii) Flow Control instruction
iii) Load and store instruction
OR
b) Explain Arithmetic instruction, logic instruction of ARM processor
c) Explain Arithmetic and Logic Instructions and flow Control Instructions of Power PC
6. a) Define the terms briefly (8)
i) Asynchronous DRAMS ii) Static Memories
iii) Optical Disks iv) RAMBUS Memory
OR

Explain the entire memory structure of a Computer system



3RD SEMESTER

3rd semester-CS
Full Marks-50

Sub: Discrete Structures (DS)
Year-2020

Group-A

Answer All Questions. Each Question Carries 1 mark)

1. (I) Let $f(X)=X+2$ and $g(X)= 2X+ 1$, find $(fOg) (X)$
- (ii) Make a truth table for $X \& Y$.
- (iii) State De-Morgan's law for logic.
- (iv) Differentiate between semi-group and sub-group.
- (v) What do you mean by Group isomorphism.
- (Vi) Differentiate between Eulerian graph and Hamiltonian graph.
- (Vii) State pigeonhole principle.
- (Viii) Draw venn diagram showing $(A \cup B) \cup C$
- (ix) What do you mean by equivalence relation ?
- (X) Is the following argument valid?
If taxes are lowered , then Income rise.
Income rise, taxes are lowered.

Group-B

(Answer all questions .each question carries 8 marks)

2. (a) Prove that $1+2+2^2+2^3+2^4+ \dots + 2^n = 2^{n+1} -1$, using Mathematical Induction.
OR
- (b) Prove $[(A \rightarrow B) \wedge A] \rightarrow B$ is a tautology.
3. Prove that $\overline{A \cap B} = \overline{A} \cup \overline{B}$.
OR
- (b) What are different types of relation ? Explain each one in brief.
4. (a) Minimise the following functions using algebraic method.
 $Z=f(A,B,C)= \overline{A} \overline{B} \overline{C} + \overline{A} B + AB \overline{C} + AC$
 $Z= f(A, B, C)= \overline{A} B + B \overline{C} + BC + A \overline{B} \overline{C}$.
OR
- (b) Define Boolean Expression. What are the different types of canonical forms? Explain each one in brief.
5. (a) Prove that ${}^n C_r = {}^{n-1} C_{r-1} + {}^{n-1} C_r$
OR
- (b) State and Explain Baye's theorem.
6. (a) A given connected graph G is an Euler graph. if and only if all the vertices of G are of even degrees.
OR
- (b) What are the different types of graph ? Explin each one in brief with suitable diagram.



3RD SEMESTER

3rd Sem-CS
Full Marks-50

Sub: Discrete Structures (DS)
Year-2018

Group-A

Answer All Questions .Each Question Carries 1 mark)

1. (I) Let $f(X)=X+2$ and $g(X)= 2X+ 1$, find $(f \circ g)(X)$
- (ii) Make a truth table for $P \cup Q$.
- (iii) State De-Morgan's law for logic.
- (iv) Differentiate between semi-group and sub-group.
- (v) What do you mean by Group isomorphism.
- (Vi) Differentiate between Eulerian graph and Hamiltonian graph.
- (Vii) State pigeonhole principle.
- (Viii) Draw venn diagram showing $(A \cup B) \cup C$
- (ix) What do you mean by equivalence relation ?
- (X) Is the following argument valid?
If taxes are lowered , then Income rise. Income rise, taxes are lowered.

Group-B

(Answer all questions .each question carries 8 marks)

2. (a) Prove that $1 + 2 + 2^2 + 2^3 + 2^4 + \dots + 2^n = 2^{n+1} - 1$, using Mathematical Induction.
OR
- (b) Prove $[(A \rightarrow B) \wedge A] \rightarrow B$ is a tautology.
3. Prove that $\overline{A \cap B} = \overline{A} \cup \overline{B}$.
OR
- (b) What are different types of relation ? Explain each one in brief.
4. (a) Minimise the following functions using algebraic method.
 $Z=f(A,B,C)= \overline{A} \overline{B} \overline{C} + \overline{A} B \overline{C} + A B \overline{C} + A C$
 $Z= f(A, B, C)= \overline{A} B + B \overline{C} + B C + A \overline{B} \overline{C}$.
OR
- (b) Define Boolean Expression. What are the different types of canonical forms ? Explain each one in brief.
5. (a) Prove that ${}^n C_r = {}^{n-1} C_{r-1} + {}^{n-1} C_r$
OR
- (b) How many ways four digit decimal numbers to be constructed without repeating the digits?
6. (a) A given connected graph G is an Euler graph. if and only if all the vertices of G are of even degrees.
OR
- (b) Prove that a simple graph with n vertices must be connected if it has more than $(n-1)(n-2)/2$ edges.



3RD SEMESTER

3rd semester-ITM

Sub: GE-III(NT)

Full Marks-50

Year-2018

Answer all questions from Section-A
and any 5 questions from section-B

1. a) What is the decimal equivalent of 4-digit greatest binary integer?
b) If $X=0.5000 \times 10^2$ is approximated by $X^* = 0.5100 \times 10^2$. Find the Absolute error and Relative error.
c) Evaluate $\tan^{-1} X$
d) Find an analytical expression for $n(2^X)$
e) Define composite Trapezoidal Rule.
f) Define Simpson's 1/3 Rule.
g) Define upper Triangular matrix.
h) Determine the Eigen values for the following matrix.
$$A = \begin{bmatrix} 3 & 1 \\ 6 & 2 \end{bmatrix}$$

i) write Runge-Kutta method of order four.
j) Approximate $f(X) = \sin X$, for $X=0.1$ by a second degree Taylor Polynomial.

Group-B

2. a) Find a real root of the equation $X^3 - X - 1 = 0$ correct up to two significant digits using Bi-Section method.
b) Find a real root of $X^3 - 2X - 5 = 0$ by regular falsi method correct up to two decimal places.
OR
c) Derive the rate of convergence of Newton Raphson method.
d) Obtain a root of the equation $X^3 - 4X - 9 = 0$ correct up to three decimal places using Secant method.
3. a) Find the interpolating polynomial for the following data
 $f(-1) = -2$, $f(0) = -1$ and $f(1) = 4$.
b) Use Lagrange's interpolation formula to find $f(X)$ when $X=0$, given the table:
- | | | | | |
|------|----|----|----|----|
| X: | -1 | -2 | 2 | 4 |
| f(X) | -1 | -9 | 11 | 69 |
- OR
c) Find the unique polynomial of degree 2 such that $f(0)=1$, $f(1)=3$, $f(3)=55$, using Newton Divided difference table.
d) Approximate $f(X) = e^x$ by a fifth degree Taylor polynomial in X , for $X=1.2$
4. a) Solve by Gauss Elimination method :
 $X + 3Y + 2Z = 5$
 $2X - y + Z = -1$
 $X + 2y + 3Z = 2$
b) Solve the following System by of Linear equations by Gauss-Seidel method starting with initial guess.
 $X_1 = 0$, $X_2 = 0$, $X_3 = 0$
 $10X_1 + X_2 + X_3 = 12$
 $X_1 + 10X_2 + X_3 = 12$
 $X_1 + X_2 + 10X_3 = 12$
OR

- c) Solve the following system by Gauss –Jordan method
 $2X+2Y+4Z= 18$
 $X+3Y + 2Z= 13$
 $3X+Y+3Z = 14$
- d) Determine the Eigen values and the corresponding eigen spaces for the following matrices.

$$A = \begin{bmatrix} 1 & -1 & 2 \\ 0 & 1 & 0 \\ 1 & 2 & 1 \end{bmatrix}$$

5. a) Find the approximation to $Y(0.4)$ using Taylor method of order Two with $h=0.2$ for the initial value problem. [4x2=8]
 $dY/dX = Y-X+1, Y(0)=1$
- b) Solve $dY/dX=Y-X, X=0, Y=2$ by runge-Kutta method of order 2 choosing $h=0.1$ for $Y(0.1)$
OR
- c) Solve $dY/dX=1-Y, Y(0)=0$, numerically by Runge-Kutta method of order four with $h=0.1$ for $X=0.1$.
- d) Use the Euler's method to solve numerically the initial value problem $dY/dX = -2XY^2, Y(0)=1$, with $h=0.2$, on $[0, 1]$.
6. Write short notes on :
- (a) Runge –Kutta method of order 4.
(b) Adam's –Basforth –Moultan method.
OR
- (c) Given $dY/dX = (Y-X)/(Y+X)$, with $Y=1$ for $X=0$. Find approximately for $X=0.1$ by Euler's method.
- (d) If $f(X) = 1/X$, then show that $f(a,b,c,d) = 1/abcd$.



3RD SEMESTER

3rd semester-ITM

Sub: GE-III(NT)

Full Marks-50

Year-2019

Section-A is compulsory .Answer any FIVE from section-B

Section-A

1. Answer the following questions. [2x5]
- What is loss of significance?
 - Define interpolation.
 - What is geometrical interpolation of Secant method?
 - What is Pivoting?
 - Define one point Gaussian Quadrature formulae.

Section-B

2. Find approximately the root of the equation $X^3 - 8X - 4 = 0$ lying in the interval [3,4] by using Newton –Raphson method.

OR

Find by Newton Raphson method the real root of the equation $3X - \cos X = 1$ which lies between -1 and 1 .

3. Construct the Newton's difference table for the following data.

X: -1 0 2 5
f: -11 -5 -5 55

Hence find the interpolating polynomial for the above data and also interpolate $f(1)$. [8]

OR

Use a 3rd degree Newton's divided difference formula to evaluate $\log 2.25$. [8]

X	log X
1.0	0
1.5	0.17609
2.0	0.30103
2.5	0.39794

4. The velocity V (km/min) of a moped which starts from rest is given at fixed intervals of time t (min) as follows:

t	V
2	10
4	18
6	25
8	29
10	32
12	20
14	11
16	5
18	2
20	0

Estimate approximately the distance covered in 20 minutes using Simpson's 1/3 Rule.

OR

Evaluate the integral $\int_0^1 \frac{1}{1+x} dx$ by compound Trapezoidal Rule

With 6 equal subintervals. [8]

5. Solve the following system of equation by Gauss elimination method [8]

$$\begin{aligned} 2X + 3Y + Z &= 9 \\ X + 2Y + 3Z &= 6 \\ 3X + Y + 2Z &= 8 \end{aligned}$$

OR

3RD SEMESTER

Solve the system of linear equations by Jacobi iteration method . [8]

$$5X_1 - X_2 + 0 \cdot X_3 = 9$$

$$-X_1 + 5X_2 - X_3 = 4$$

$$0 \cdot X_1 - X_2 + 5X_3 = -6$$

6. Use Runge-Kutta method of order four , solve $dY/dX = 1/10(X^2 + Y^2)$,

$Y(0) = 1$ for $0 \leq X \leq 0.3$, 0.3 , choose $h = 0.1$.

[8]

OR

Find the least square quadratic polynomial $Y = a_0 + a_1X + a_2X^2$ for

$f(X) = \sin \pi X$ on the interval $[0, 1]$.

[8]



3RD SEMESTER

3rd semester-ITM
Full Marks-50

Sub: GE-III(NT)
Year-2020

Answer ALL questions

1. Answer the following questions . [2x5]
- (a) What is the order of convergence in Newton Raphson Method?
(b) What is the difference between Gauss Jacobi and Gauss-Seidel iterative method?
(c) Define error. What are different types of error?
(d) Find the product of the numbers 56.64 and 12.4 . Which one or both are correct to the significant digits given?
(e) Write the formula of Simpson's 1/3rd Rule .
2. (a) Find a real root of the equation $X^3-3X +1= 0$ and correct up to 3 decimal places. [4]
(b) Use Newton-Raphson method to find approximately the root of the equation $X^3-8X -4=0$ lying in the interval [3,4] . [4]
OR
(c) Construct Lagrange's interpolation polynomial for the following data : $f(0)=1, f(-1)=2, f(1)=3$. [4]
(d) Construct the Newton's difference table for the following data.
X: -1 0 2 5
f: -11 -5 -5 55 [4]
3. (a) Evaluate $\int_0^5 \frac{1}{1+x} dx$ by taking $h=1$, using Trapezoidal rule of the following data. [4]
X: 0 1 2 3 4 5
F(X): 1.0 0.50 0.3333 0.25 0.20 0.1667
(b) Obtain the approximate value of the integral $I = \int_0^1 X e^{-X} dx$ by Gauss –Quadrature 3-point formula and compare the approximate value with exact value. [4]
OR
- Solve the linear system of equations by Gauss -Jacobi method [8]
 $2X + Y - Z = 32$
 $X + 3Y + 10Z = 24$
 $2X + 17Y + 4Z = 35$
4. Solve the following System of equations by Gauss elimination method
 $X + 2Y + 3Z = 15$
 $2X + 3Y + 4Z = 20$
 $3X + 4Y + Z = 14$
OR
- Find the Eigen values and the corresponding eigen vectors by power method of the following matrix.
- $$A = \begin{bmatrix} 5 & 3 & 1 \\ 3 & 3 & 3 \\ 1 & 3 & 5 \end{bmatrix} \quad (\text{Can't be greater than } 9.84)$$
5. Find the approximation to $y(0.4)$ using Taylor method of order '2' with $h=0.2$ for the initial value problem. [8]
 $dY/dX = X - Y + 1 ; 0 \leq X \leq 1, \quad Y(0) = 2$.
OR

3RD SEMESTER

Evaluate approximately $Y(1.1)$, $Y(1.2)$ by Runge-Kutta method of order '4' where 'Y' is the solution of:
 $dY/dX = X^2 + Y^2$, $Y(1)=0$ with $h=0.1$.

6. Solve the following System of equations [8]

$$4X + Y + 2Z = 4$$

$$3X + 5Y + Z = 7$$

$$X + Y + 3Z = 3$$

By using Gauss-seidel method up to 3-steps starting with initial approximation $X=0$, $Y=0$, $Z=0$.

OR

Solve the initial problem [8]

$dY/dX = X+Y$, $Y(0)=0$, using adam's-Bash forth method with $h=0.1$

for starting values. Compute the analytical solution $Y=e^X-X-1$ for $X=0.1, 0.2, 0.3$.



3RD SEMESTER

Answer Six Questions including Question No-1.

1. Write the answer of the following questions. [2x5]
 - (i) How to calculate expected value of project management?
 - (ii) Define the following
 - (a) Infeasibility,(b)Two person Zero Sum Game .
 - (iii) Define and differentiate between Artificial Variable & Slack variable.
 - (iv) Define Monte-Carlo method in simulation.
 - (v) Distinguish between Primal and dual Problem .?
2. Find out Basic feasible solution by Vogel's approximation method from the following conditions: [8]

	D ₁	D ₂	D ₃	D ₄	Supply
O ₁	20	22	17	4	120
O ₂	24	37	9	7	70
O ₃	32	37	20	15	50
Demand	60	40	30	110	240

3. Solve graphically the following linear programming problem. [8]
 Minimize $Z = -4X_1 + 3X_2$
 Subject to $X_1 - 2X_2 \leq -4$;
 $2X_1 + 3X_2 \leq 13$; $X_1 - X_2 \leq 4$; and $X_1, X_2 \geq 0$.
4. Answer the following (Answer any TWO): [4x2]
 - (a) Hungarian Assignment method.
 - (b) Degeneracy
 - (c) Least Cost Method.
5. Explain the following term in details (Answer any TWO) [4x2]
 - (a) PERT
 - (b) Float and Slack Analysis
 - (c) Project Time Crashing
6. Discuss Various assumption of Markov analysis. [8]
7. Explain in Details(answer any TWO) [4x2]
 - (a) Zero-Sum in the context of Game Theory.
 - (b) Saddle point.
 - (c) Pure Strategy vs mixed Strategy.
8. Using Simplex method build –up a linear programming model for solution of the following assignment problem

Jobs	Machines			
	I	II	III	IV
A	10	20	25	15
B	15	30	18	28
C	40	20	16	20
D	25	30	24	15

3RD SEMESTER

4th Sem-ITM

Sub: GE-IV-(QT)

Full Marks-50

Year-2018

Answer Six Questions including Question No-1.

1. Write the answer of the following questions. [2x]
- (i) How to calculate expected value of project management?
 - (ii) Define the following
 - (a) Infeasibility, (b) Two person Zero Sum Game .
 - (iii) Define and differentiate between Artificial Variable & Slack variable.
 - (iv) Define Monte-Carlo method in simulation.
 - (v) Distinguish between Primal and dual Problem .?
2. Find out Basic feasible solution by Vogel's approximation method from the following conditions: [8]

	D ₁	D ₂	D ₃	D ₄	Supply
O ₁	20	22	17	4	120
O ₂	24	37	9	7	70
O ₃	32	37	20	15	50
Demand	60	40	30	110	240

3. Solve graphically the following linear programming problem. [8]
- Minimize $Z = -4X_1 + 3X_2$
Subject to $X_1 - 2X_2 \geq -4$;
 $2X_1 + 3X_2 \geq 13$; $X_1 - X_2 \geq 4$; and $X_1, X_2 \geq 0$.
4. Answer the following (Answer any TWO): [4x2]
- (a) Hungarian Assignment method.
 - (b) Degeneracy
 - (c) Least Cost Method.
5. Explain the following term in details (Answer any TWO) [4x2]
- (a) PERT
 - (b) Float and Slack Analysis
 - (c) Project Time Crashing

3RD SEMESTER

I-S-B.Sc.-(ITM)-CBCS-AECC-I-(C.English)-R & B
2018

Full Marks -80

Time-As in the Programme

The figure in the right hand margin indicates marks.

Section-A

Answer all questions.

[1x20]

1. Fill in the blanks of the following sentences choosing appropriate alternatives.
 - (i) One of the chairs _____ broken.
(a) is (b) are (c) have (d) does
 - (ii) Neither you nor he _____ willing to come.
(a) were (b) does (c) has (d) was
 - (iii) No one _____ to be criticized.
(a) like (b) liking (c) likes (d) link
 - (iv) A man as well as his Friends _____ ready to jump.
(a) was (b) have (c) has (d) were
 - (v) Every day and every night _____ its own pleasures.
(a) bring (b) brought (c) brings (d) bringing
2. (i) The passive form of "The people in South India eat Sun-boiled Rice" is _____.
(ii) The passive form of "The barber cut my hair" is _____.
(iii) The passive form of "Sarita has typed the Letter" is _____.
(iv) The passive form of "Nitin beat the dog hard" is _____.
(v) The passive form of "The police are investigating the cases" _____.
3. Make sentences :
Abide by, abstain from, Coincide with, Comply with, deficient in, Freedom from, proficient in, Rejoice at, Weary of, yield to.

Section – B

Answer any SIX:

[6X10]

1. Draft a letter to be sent to the local government offices and business houses for promoting the sale of a newly designed steel cabinet your firm has just introduced in the market.
2. As the Librarian of your organization write a letter claiming compensation for 39 books which arrived in damaged condition.
3. Discuss the barriers to effective written communication. Illustrate your answer with examples.
4. Make sentences using the following pairs of words.
 - (a) Principal, Principle
 - (b) Council, Counsel
 - (c) Write, Right
 - (d) Accept, Except
5. Write short notes on:
 - (i) Horizontal Communication.
 - (ii) Vertical Communication.
 - (iii) Interpersonal Communication.
 - (iv) Grapevine Communication.
6. (a) What is creative writing? How to write a business letter?
(b) Discuss the importance of Reading skills with suitable example.
7. What do you mean by information transfer? How to interview for the newspapers.
8. (a) Assuming yourself to be the head of the Electronic department of Your institution, write a report of trouble on the fire caused in the Laboratory in Your department. Invent details.



3RD SEMESTER

III-S-B.SC. (H) CBCS – (C.S) – SEC-I-(Eng.Comm.)
2018

Full Marks-80

Time-As in the programme

The figure in the right hand margin indicate marks

Answer ALL questions.

GROUP- A

answer all questions. Each carries 2 marks.

1. (a) What is a collocation ?
(b) What are the different types of communication?
(c) Choose the best preposition in each sentence:
(1) I was born ____ May.
(2) They climbed ____ the highest hill they could find.
(d) Choose the best phrasal verb in each sentence:
(1) Would _____ my dog for me this weekend?
(2) My neighbour _____ eggs yesterday.
(e) Which is the most important goal in business communication?
(f) What happens when a person fails to listen properly?
(g) How can Listening Skill be improved?
(h) What do you mean by Socio psychological barriers to communication?
(i) What is a group Discussion?
(j) What are the two commonly asked Question in an Interview?

GROUP- B

Answer all questions. Each carries 12 mark.

2. (a) Explain in Detail the process of Communication.
OR
(b) Write in Detail about the Elements of Communication.
3. (a) Discuss the physical barriers in Communication
OR
(b) What are the different types of nonverbal communication? Explain each one.
4. (a) Answer the questions 1 to 3 are based on this passage. Reviving the practice of using elements of popular music in classical composition, an approach that had been in hibernation in the United State during the 1960s, composer Philip Glass (born 1937) embraced the ethos of popular music Philip Glass (born 1937) embraced the ethos of popular music in his compositions. Glass based two symphonies on music by rock musicians David Bowie and Brian Eno, but the symphonies, sound is distinctively his. Popular elements do not appear out of place in glass's classical music, which from its early days has shared certain harmonies and rhythms with rock music. Yet this use of popular elements has not made Glass a composer of popular music. His music is not a version of popular music packaged to attract classical listeners; it is high art for listeners steeped in rock rather than the classics.
Select only one answer choice.
1. The passage addresses which of the following issues related to Glass's use of popular elements in his classical compositions?
 - a. How it is regarded by listeners who prefer rock to the classics.
 - b. How it has affected the commercial success of Glass's music
 - c. Whether it has contributed to a revival of interest among other composers in using popular elements in their compositions

- d. Whether it has had a detrimental effect on Glass's reputation as a composer of classical music
- e. Whether it has caused certain of Glass's works to be derivative in quality.
2. Consider each of the three choices separately and select all that apply. The passage suggests that Glass's work displays which of the following qualities?
 - a. A return to the use of popular music in classical compositions
 - b. An attempt to elevate rock music to an artistic status more closely approximating that of classical music.
 - c. A long-standing tendency to incorporate elements from two apparently disparate musical styles
3. Select the sentence that distinguishes two ways of integrating rock and classical music.

OR

(b) Directions for questions 1 to 5 – Read the short passage below and answer the questions that follow:

(You should check your answers after attempting the questions)

A sanctuary may be defined as a place where Man is passive and the rest of Nature active. Till quite recently Nature had her own sanctuaries, where man either did not go at all or only as a tool-using animal in comparatively small numbers. But now, in this machinery age, there is no place left where man cannot go with overwhelming forces at his command. He can strangle to death all the nobler wild life in the world to – day. To-morrow he certainly will have done so, unless he exercises due foresight and self-control in the mean time.

There is not the slightest doubt that birds and mammals are now being killed off much faster than they can breed. And it is always the largest and noblest forms of life that suffer most. The whales and elephants, lions and eagles, go. The rats and flies, and all mean parasites, remain. This is inevitable in certain cases. But it is wanton killing off that I am speaking of to-night. Civilized man begins by destroying the very forms of wild life he learns to appreciate most when he becomes still more civilized. The obvious remedy is to begin conservation at an earlier stage, when it is easier and better in every way, by enforcing laws for close seasons, game preserves, the selective protection of certain species, and sanctuaries. I have just defined a sanctuary as a place where man is passive and the rest of Nature active. But this general definition is too absolute for any special case. The mere fact man has to protect a sanctuary does away with his purely passive attitude. Then, he can be beneficially active by destroying pests and parasites, like bot-flies or mosquitoes, and by finding antidotes for diseases like the epidemic which periodically kills off the rabbits and thus starves many of the carnivore to death. But, except in cases where experiment has proved his intervention to be beneficial, the less he upsets the balance of Nature the better, even when he tries to be an earthly Providence.

1. The author implies that his first definition of a sanctuary is:
 - a. Totally wrong
 - b. Some what idealistic
 - c. Unhelpful
 - d. Indefensible
 - e. Immutable
2. The author's argument that destroying bot-flies and mosquitoes would be a beneficial action is most weakened by all of the following except:
 - a. Parasites have an important role to play in the regulation of populations
 - b. The elimination of any species can have unpredictable effects on the balance of nature
 - c. The pests themselves are part of the food chain

- d. These insects have been introduced to the area by human activities
e. Elimination of these insects would require the use of insecticides that kill a wide range of insects
3. It can be inferred that passage is:
a. Part of an article in a scientific journal
b. Extracted from the minutes of a nature club
c. Part of a speech delivered to an educated audience
d. A speech delivered in a court of law
4. What should be the most appropriate central idea of this passage:
a. Author argues that man kills big animals but saves mosquitoes & other parasites.
b. Man is selfish by nature so he up against the wild life which is harmful for his survival
c. Ecological balance, if not maintained by man be harmful in long run.
d. Author proposes a programme for not disturbing the balance of nature as it is beneficial for mankind.
e. In view of the author man should not intervene in natural environments.
5. You are a sales representative for your company. Write a letter to Mike Mason of ABC Enterprises, introducing one of your new products or services. Be sure to give important details about your product/service.

OR

Roger Owens, President of XYZ Corporation, will be visiting your city next week. Write a letter inviting his and his wife to dinner on Thursday night. (Be sure to specify the time and place of the dinner.)

6. (a) Discuss the process of Listening .
(b) How can Listening Skills be improved? Explain the properties of matter.

OR

(c) What is a group Discussion? What important does group discussion plays in improving communication? What are the Dos and Don'ts in a group discussion?
(d) What are the various types of interview? What are the Points to be borne in mind as an interviewer or an Interviewee? What are the Do's and Don'ts in interview?



3RD SEMESTER

II-S-B.Sc.-(H)- COMP. Sc -AECC-II-MIL – Com- (Alt.Eng.)-R & B

2018

Full Marks -80

Time-As in the Programme

The figure in the right hand margin indicates marks.

Section-A

Answer all questions.

[2x10=20]

1.
 - (a) What arrangements did Corbet make for his night-long vigil in the village ?
 - (b) How did Sudhir Babu breathe a new lease of life into his old bicycle ?
 - (c) What is the funniest aspect of the head master of the school in "George V high School" ?
 - (d) What made Private Quelch stand out among his peers in the army ?
 - (e) Why does Connie feel sorry for Mrs. Winston in "Uneasy Homecoming" ?
 - (f) How does water add beauty to the countryside as described in "Water the Elixir of Life" .
 - (g) How can commonsense be counted as education? Answer in the context of the essay "An Educated Person".
 - (h) What are the uses of having emotion of feeling as an entry point into teaching literature as described in the essay "No Learning Without Feeling" ?
 - (i) In what ways does the author compare writing to praying in the essay "The Empty Page" ?
 - (j) How is an emoji described by the author in "The Emoji Disruption".

Section – B

2. Answer any Two of the following : [6x2=12]
 - (a) Why does Corbett think that his mission in Bhainswara was a failure ?
 - (b) How was the bicycle an inseparable part of Sudhir Babu's life?
 - (c) Give a brief account of the headmaster in "George V High School".
 - (d) How does the story "The man who knew Too Much" teach the moral that excessive knowledge can also land a person in humiliating circumstances?
3. Answer any TWO of the following: [6x2=12]
 - (a) Why is water compared with the elixir of life ? Answer in the context of the essay "An Educated Person".
 - (b) How does the essay "An Educated Person" convey the message about true education?
 - (c) How does Hollander argue the value of a literary education for the young in the essay "No Learning Without Feeling".
 - (d) In what ways do you think the author establishes writing as a process and not a product in the essay "The Empty Page"?

4. Read the passage carefully and answer the questions that follow: [3x4=12]

Water is the basis of all life. Every animal and every plant contains a substantial proportion of free or combined water in its body, and no kind of physiological activity is possible in which the fluid does not play an essential part. Water is, of course, necessary for animal life, while moisture in the soil is equally imperative for the life and growth of plants and trees, though the quantity necessary varies enormously with the species. The conservation and utilisation of water is thus fundamental for human welfare. Apart from artesian water the ultimate source in all cases is rain or snowfall. Much of Indian agriculture depends on seasonal rainfall and is therefore very sensitive to any failure or irregularity of the same. The problems of soil erosion and of inadequate or irregular rainfall are closely connected with each other. It is clear that the adoption of techniques preventing soil erosion would also help to conserve and keep the water where it is wanted, in other words, on and in the soil, and such techniques therefore serve a double purpose thus lost to the country. The harnessing of our rivers, the waters of which now mostly run to waste, is a great national problem which must be

considered and dealt with. On national lines. Vast areas of land which at present are mere scrub jungle could be turned into fertile and prosperous country by courageous and well-planned action. Closely connected with the conservation of water supplies is the problem of afforestation. The systematic planting of suitable trees in every possible or even in impossible areas, and the development of what one can call civilized forests, as distinguished from wild and untamed jungle, is one of the most urgent needs of India. Such plantation would directly and indirectly prove a source of untold wealth to the country. They would check soil erosion and conserve the rainfall of the country from flowing away to waste, and would prove the necessary supplies of cheap fuel, and thus render unnecessary the wasteful conversion of farmyard manure into a form of fuel.

- (a) Why water is the basis of all life ?
 - (b) Why the problems of soil erosion and of inadequate or irregular rainfall are closely connected with each other?
 - (c) What is one of the most urgent needs of India according to the writer?
 - (d) What is one of the most urgent needs of India according to the writer?
5. Expand any ONE of the following ideas into a paragraph: [12]
- (a) Variety is the spice of life.
 - (b) Make hay while the sun shines.
 - (c) Sweet are the uses of adversity.
6. Do as directed: [12]
- (a) Find appropriate synonyms for the following words and use them in sentences:
 - (i) Destruction
 - (ii) Generous
 - (b) Find appropriate antonyms for the following words and use them in sentences:
 - (i) Unique
 - (ii) Sober
 - (c) Change the voice:
 - (i) Cars and planes produce greenhouse gases.
 - (ii) Trees take in carbon dioxide.
 - (d) Provide the appropriate form of the verb in the bracket :
 - (i) when I reached the station, the train (Leave).
 - (ii) I (visit) the Taj Mahal next month.
 - (e) Use the following phrasal verbs to form sentences:
 - (i) Turn down
 - (ii) Put out
 - (f) Change the following into indirect speech:
 - (i) Ajay said, "I am very busy now".
 - (ii) The teacher says, 'if you work hard, you will pass'.



3RD SEMESTER

III-S-BSc.ITM – P-SEC – I – (BC & EP) ENGLISH
2020

FULL MARK -50

Time As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

Answer all questions.

1. Do as directed. [1x10]
 - (i) Divide the following words in to syllables. 'Passion', 'Painful'
 - (ii) everybody admired him for his performances.
(Write the noun form at the underlined word)
 - (iii) I have to attend the meeting. (Make the sentence passive)
 - (iv) He could not understand the point in the meeting. (use phrasal verb)
 - (v) He said, "Please, help me out of the problem". (Indirect speech)
 - (vi) He neglected his duty. (Negative sentence)
 - (vii) Around 40 persons died in the accident (Question making)
 - (viii) She is bold. She is beautiful. (Join the two sentences).
 - (ix) The man was sleeping. The thief entered the home. (Complex sentence)
 - (x) Make a sentence by using the modal verbs. (May, Could)
2. Give a detail description about verbal nonverbal communication? [14]

OR

Define creative thinking and critical thinking explain both the kind.
3. What is C.V? Mention the difference between 'CV' and 'Resume', Prepare CV of your own giving all personal as well as professional details? [14]

OR

What is group discussion? Discuss the method and importance of group discussion in a professional field.
4. What is language function? How do positive attitude and bias – free language influence communication?

OR

What is a job application letter ? What is the importance of a job application letter in the job market?
5. What is the important of courtesy while writing business letters? Write the principles of business letter Writing? [14]

OR

How to plan a formal letter? Why is it important to plan a letter in a systematic way? [14]
6. Answer the following. [3.5x4]
 - (i) What is written communication ? Write the mediums of written communication.
 - (ii) What is consonant cluster? Give example
 - (iii) What is 'feedback' in communication?
 - (iv) Define phonemics?

OR

 - (I) What is a report ?
 - (ii) What are the steps to write a report?
 - (iii) What is the correct procedure for writing check list for reports?
 - (iv) How to prepare a draft report?



3RD SEMESTER

III - S- B.Sc.-(ITM) - CBCS - VIII - (ME)
2018

Full Marks - 80

Time : As in the programme

The figure in the right hand margin indicate marks.

Answer all questions from Section - A and any 5 questions from Section - B
Section-A

1. Answer all the questions. [2*10]
- (a) What do you mean by cardinal utility?
 - (b) What do you mean by giffen goods?
 - (c) What is law of demand?
 - (d) What do you mean by veblen goods?
 - (e) Define opportunity cost.
 - (f) What do you mean by Marginal rate of technical substitution?
 - (g) What is market price?
 - (h) Explain price elasticity of demand.
 - (i) Define market supply of labor.
 - (j) What do you mean by excess capacity of a firm.

Section - B

Answer any FIVE:

[12*5]

- 2. Why is the market demand curve usually less elastic than demand curve faced by the individual firms in the market.
- 3. What do you mean by price Elasticity of demand? Discuss different types of price Elasticity of demand.
- 4. State and explain short run production function.
- 5. Write the demand equation for which the price elasticity for all demand is zero.
- 6. What do you mean by price discrimination? How price and output are determined under discriminating monopoly.
- 7. State and explain marginal productivity theory of distribution.
- 8. Explain the law of diminishing marginal effect.

III - S- B.Sc.-(ITM) - CBCS - VIII - (ME)



3RD SEMESTER

III - S- B.Sc.-(ITM) - CORE - VIII - (Mng.Eco.)
2019

Full Marks - 80

Time : As in the programme

The figure in the right hand margin indicate marks.

Answer all questions from Section - A and any 5 questions from Section - B

Section-A

1. Write short notes : [1*10]
- (a) What do you mean by giffen goods?
 - (b) Define joint demand.
 - (c) Define increasing returns to a factor.
 - (d) Distinguish between Average product and marginal product.
 - (e) Define implicit cost.
 - (f) What are the conditions of the equilibrium of a firm?
 - (g) What is break-even point?
 - (h) Define the term discriminating Monopoly.
 - (i) What is selling costs?
 - (j) What cause the labor supply curve to shift?

Section - B

1. (a) What are various categories of Elasticity of demand? Explain the concept of cross price Elasticity of demand. [7]
(b) Discuss various factors affects Elasticity of supply. [7]
OR
(c) Discuss various theory of consumer behavior. [7]
(d) Explain various types of demand. [7]
2. (a) Discuss "Law of diminishing marginal utility." [7]
(b) Discuss short run cost of traditional theory. [7]
OR
(C) Discuss economies of scale and economies of scope. [7]
(d) What is isoquant curve? Discuss various assumption of isoquant curve. [7]
3. What is meant by perfect competition? Explains the short period and long period equilibrium of a firm under perfect competition. [14]
OR
Define monopoly. Discuss various features of monopoly. Explain nature of demand under monopoly. [14]
4. (a) State and explain the marginal productivity theory of labour. [7]
(b) Discuss various features of monopolistic competition. [7]
OR
(c) Discuss equilibrium under monopolistic condition. [7]
(d) Define price leadership. Discuss various advantages and disadvantages of dominant price leadership model. [7]
5. (a) Describe the term price discrimination. When is it possible and profitable to society? [7]
(b) What are indifference curves? Explain various properties of indifference curve. [7]
OR

Write short notes (Answer any Two) : [7X 2]

- (a) Budget Line
- (b) Welfare cost of Monopoly
- (c) Optimal combination of Resources
- (d) Revealed Preference Theory

III - S- B.Sc.-(ITM) - CBCS - VIII - (ME)



3RD SEMESTER

III-S-B.Sc.-(ITM)-Core- VIII-(Mng.Eco.)
2019

Section -A

1. Write short notes: [1x10]
- (a) What do you mean by Giffen goods?
 - (b) Define joint demand.
 - (c) Defining increasing returns to a factor.
 - (d) Distinguish between Average Product and Marginal Product.
 - (e) Define Implicit Cost.
 - (f) What are the conditions of the equilibrium of a firm?
 - (g) What is break-even point?
 - (h) Define the term discriminating Monopoly.
 - (i) What is Selling Costs?
 - (j) What cause the Labor Supply Curve to Shift?

Section - B

1. (a) What are various categories of Elasticity of demand? Explain the concept of Cross Price Elasticity of Demand. [7]
(b) Discuss various factors affects elasticity of supply. [7]
OR
(c) Discuss various theory of consumer behaviour. [7]
(d) Explain various types of demand. [7]
2. (a) Discuss "Law of diminishing marginal utility". [7]
(b) Discuss short run cost of traditional theory. [7]
(c) Discuss economies of scale and economics of scope. [7]
(d) What is isoquant curve ? Discuss various assumption of isoquant curve. [7]
3. What is meant by perfect competition? Explains the short period and long period equilibrium of a firm under perfect competition.
OR
Define Monopoly. Discuss various features of monopoly. Explain nature of demand under monopoly.
4. (a) State and explain the marginal productivity theory of labour. [7]
(b) Discuss various features of monopolistic competition. [7]
OR
(c) Discuss equilibrium under monopolistic condition. [7]
(d) Define price leadership. Discuss various advantages and disadvantages of dominant price leadership model. [7]
5. (a) Describe the term price discrimination. When is it possible and profitable to society? [7]
(b) What are indifference curves? Explain various properties of indifference curve. [7]
OR

Write short notes (Answer any TWO) [7X2]

- (a) Budget Line.
- (b) Welfare Cost of Monopoly.
- (c) Optimal Combination of Resources.
- (d) Revealed Preference Theory.



3RD SEMESTER

III - S- B.Sc.-(ITM) - CORE - VIII - (Mng.Eco.)
2020

Full Marks - 80

Time : As in the programme

The figure in the right hand margin indicate marks.

Answer all questions from Section - A and all questions from Section - B

Section-A

1. Write short notes : [1*10]
- (a) What do you mean by Managerial Economics?
 - (b) Differentiate in between individual and market demand.
 - (c) Define elasticity of demand.
 - (d) Distinguish between change in demand and change in quantity demand.
 - (e) Define isoquants.
 - (f) What are the conditions of the equilibrium of a firm?
 - (g) What is sunk cost?
 - (h) Why $AR = MR$ in competitive market.
 - (i) What is selling costs? Mention with examples.
 - (j) Write down essential features of oligopoly firm?

Section - B

2. (a) Differentiate in between cardinal and ordinal utility theory. [7]
(b) Discuss various factors affects Elasticity of supply. [7]
OR
(c) What are various types of Elasticity of demand? Explain the cases of price Elasticity of demand. [7]
(d) Explain law of demand with exceptions. [7]
3. (a) Discuss economies of scale and economies of scope [7]
(b) Discuss short run cost of traditional theory. [7]
OR
Write short notes (Answer any Two) : [7X 2]
(i) Law of diminishing marginal utility
(ii) Economies of scale
(iii) Optimal combination of resources
(iv) Three stages of production
4. What is meant by perfect competition? Explains the short period and long period equilibrium of a firm under perfect competition. [14]
OR
Define monopoly. Explain price and output determination of monopoly market. [14]
5. (a) State and explain the marginal productivity theory of labour. [7]
(b) Discuss various features of monopolistic competition. [7]
OR
Write short notes (Answer any Two) : [7X 2]
(i) Equilibrium under monopolistic market
(ii) Dominant price leadership model
(iii) Monopolistic Competition
(iv) Price discrimination
6. State and explain the marginal productivity theory of labour. [7]
OR
Describe the term price discrimination. When is it possible and profitable to society with examples [7]

III - S- B.Sc.-(ITM) - CBCS - VIII - (ME)

3RD SEMESTER

III-S-B.SC. (ITM) Core – VIII – (M.E)
2019

Full Marks-80

Time-As in the programme

The figure in the right hand margin indicate marks

Section –A is compulsory, Answer any FIVE from section – B

Section - A

1. Write short notes [1*10]
- What do you mean by Giffen goods
 - Define Joint demand
 - Define increasing returns to a factor
 - Distinguish between Average product and marginal product
 - Define implicit Cost
 - What are the conditions of the equilibrium of a firm?
 - What is the break-even point?
 - Define the term discriminating monopoly?
 - What is selling cost
 - What cause the labour supply curve to shift

SECTION-B

1. (a) What are the various categories of Elasticity demand? Explain the concept of Cross price Elasticity of Demand? [7]
b) Discuss various factors affects elasticity of supply. [7]
OR
c) Discuss various theory of consumer behaviour. [7]
d) Explain various types of demand. [7]
2. a) Discuss “Law of diminishing marginal utility” [7]
b) Discuss short run cost of traditional theory. [7]
OR
c) Discuss economies of scale and economics of scope. [7]
d) What is isoquant curve ? Discuss various assumption of isoquant curves. [7]
3. What is meant by perfect competition ? explains the short period and long period equilibrium of a firm under perfect competition. [14]
OR
Define Monopoly. Explain nature of demand under monopoly.
4. (a) State and explain the marginal productivity theory of Labour. [7]
(b) Discuss various features of monopolistic competition. [7]
OR
(c) Discuss equilibrium under monopolistic condition. [7]
(d) Define price leadership. Discuss various advantages and disadvantages of dominant price leadership model.
5. (a) Describe the term price discrimination. When is it possible and profitable to Society ? [7]
(b) What are indifference curves? Expalin various properties of indifference curve. [7]
OR

Write short notes (Answer any TWO): [7X2]

- Budget Line.
- Welfare Cost of Monopoly.
- Optimal Combination of Resources.
- Revealed Preference Theory.



3RD SEMESTER

III-S-B.SC.(ITM) – P –C – VIII – (M.E)
2020

Full Marks-50

Time-As in the programme

The figure in the right hand margin indicate marks

Answer all questions including Q.N-1

1. Write short notes [1*10]
 - a) What do you mean by Managerial Economics?
 - b) Differentiate in between individual and market demand?
 - c) Define elasticity of demand
 - d) Distinguish between change in demand & change in Quantity demand
 - e) Define ISO quants
 - f) What are the conditions of the equilibrium of firm?
 - g) What is sunk cost?
 - h) Why $AR=MR$ in competitive market?
 - I) What is selling costs? Mention of with examples
 - j) Write down essential features of Oligopoly firm
 2.
 - a) Differentiate in between cardinal and ordinal utility theory [7]
 - b) Discuss various factors affects elasticity of supply [7]OR
 - c) What are the various types of Elasticity of demand? [7]Explain the cases of price elasticity of Demand.
 - d) Explain law of demand with Exceptions [7]
 3.
 - (a) Discuss economics of scales and economics of scope [7]
 - (b) Discuss short run cost of traditional theory [7]OR
- Write short notes (answer any two) [7*2]
- (i) law of diminishing marginal utility
 - (ii) Economies of Scale
 - (iii) Optimal combination resources
 - (iv) Tree stages of production
4. What is the meant by perfect competition? Explain the short period and long period equilibrium of a firm under perfect competition. [14]
- OR
- Define monopoly. Explain price & output determination of monopoly market. [14]
5.
 - a) State and Explain the marginal productivity theory of Labour [7]
 - b) Discuss various features of monopolistic competition [7]
- OR
- Write short notes (answer any two) [7*2]
- I) Equilibrium under monopolistic market
 - ii) Dominant price leadership model
 - iii) Monopolistic competition
 - iv) Price description
6. State and explain the marginal productivity theory of Labour [14]
- Or
- Describe the term price discrimination. When is it possible and profitable to society with examples? [14]



3RD SEMESTER

3rd semester-BCA Sub: GE-III(Stat. & Prob.)
Full Marks-70 Year-2018
Answer ALL the questions

1.a) Find the probability that the person selected was 65 years of age, given that the person owned at least five years of wearable sneakers.

b) Prove that $P(A \cap B) = P(A) \cdot P(B|A)$

$$P(A \cap B) = P(B) \cdot P(A|B)$$

OR

c) A smoke detector system uses two devices A and B. If smoke is present that it will be detected by device A is 0.95 and by device B is 0.94. Then find the probability that it will not be detected.

d) Two people enter in room and their birthdays will be recorded, then find the probability that the two people have a specific pair of birthdays.

2.a) Use cumulative binomial table $n=5$ and $p=0.6$ to find the probability that three or more success.

b) Over a long period of time it has been observed that a professional basketball player can make a free throw on a given trial with probability $=0.8$. Suppose he shoots for four free throws. Then find the probability that he will make at least one free throw.

OR

c) Find $P(X=2)$ for poisson random variable with $\mu = 2.2$.

d) Calculate the mean and standard deviation of binomial distribution.

3.a) Explain the concept of confidence interval Estimation.

b) Find 99% confidence interval for population mean μ for the values $n=50$, $X=22.8$, $S^2 = 3.44$.

OR

c) A random sample of size $n=49$ is selected from a population with mean $= \mu = 53$ and standard deviation is 22. What will be the approximate shape of the sampling distribution of X .

d) State and explain the concept of large sample estimation.

4. In a comparison of the mean 1-month losses for women aged 20-30 years, these sample data were obtained for each of two diets. :

	Diet-I	Diet-II
Sample Size(n)	40	40
Sample Mean (\bar{X})	10	8
Sample Variance(S^2)	4.3	5.7

Do the data provide sufficient evidence to indicate that diet I produces a greater mean weight loss than diet-II. ?

OR

3RD SEMESTER

Write short notes on :

- i) Testing of Hypothesis.
- ii) Student's t distribution.

5. In order to study the relationship of advertising and capital investment with corporate profits the following data recorded in units of Rs. 100,000, were collected for 10 medium sized firms in the same year. The variable Y represents profit for the year X_1 represents capital investment, X_2 represents advertising expenditures.

Y	X_1	X_2
1	20	0
16	12	4
18	15	5
13	6	4
2	16	2

Using the Model $E(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2$ and an appropriate computer software package, find the least squares prediction equation for these data.

OR

Write short notes on :

- i) Analysis of variance for linear regression.
- ii) Least square method.



3RD SEMESTER

II-S-BSc.ITM – CC-V – (DS)- R & B
2018

FULL MARK -50

Time As in the Programme

The figure in the right hand margine indicate marks.

Answer ALL question.

Answer all questions.

[1x5]

1. (a) Explain ADT with suitable examples. [4]
(b) Evaluate the postfix expression 3,16,2,+,*,12,6,/,-.
(c) what do you mean by Expression Tree ? Give an example of it.
(d) list out applications of stack.
(e) What are the Limitations of arrays in comparisons of the linked lists?
2. (a) What is data structure? Explain the objective of data structure. Discuss types of data structure with examples. [4]
(b) Write the C code to access the elements of 1D array A having capacity 15. [4]
OR
(c) What do you mean by merging of two arrays? Write an algorithm for merging two 1D arrays into single array. [8]
3. (a) What is list ? Write an algorithm for creation a single linked list. Also write algorithm for insertion a new node to that SLL at end and at specific position. [8]
OR
(b) What do you mean by Double Linked list ? What is the advantageous of DLL over SLL. [4]
(c) List out the applications of linked list. Explain the memory representation of Linked list. [4]
4. (a) Explain the process of conversion from infix expression to postfix expression using stack. [4]
(b) Convert infix to postfix using stack $Z+(Y*X-(W/V\wedge U)*T)*S$. [4]
OR
(c) Explain the algorithm for quick sort. Sort the elements using quick sort 56,24,20,17,2. [8]
5. (a) Write the algorithm for Linked list representation of queue. [4]
(b) What is queue ? Explain the overflow and underflow conditions of Linear queue. [4]
OR
(c) What is double ended queue ? Explain types of double ended queue with suitable examples. [8]
6. (a) In-order traversal :10,12,20,30,37,40,45
Preorder traversal : 30,20,10,12,40,37,45. Construct BST using the above traversals. [4]
(b) What is a tree ? Describe the terminologies used in tree. [4]
OR
(c) Construct the AVL tree by using the keys: 50, 40,35,58,48,42,60,33,25. Delete 40 after constructing the AVL tree. [8]

3RD SEMESTER

II-S-B.SC. (ITM) Core – V – (D.S)
2019

Full Marks-80

Time-As in the programme

The figure in the right hand margin indicate marks

Answer ALL questions.

1. Write the answer of the following questions. [2x5]
 - (a) How to calculate degree of a node ? Explain it with example.
 - (b) What is the postfix operation of $(A*B+C) - (D/E)$?
 - (c) How to define the structure of double linked list to store the data ?
 - (d) How a binary tree is called threaded binary tree ?
 - (e) What is Compaction ?
2. Explain different types of data structure with examples. [8]

OR

 - (a) write a program to add two different 3-dimensional matrix. [4]
 - (b) Define Pointer. Explain its advantages over array ? Write an example how a set of elements are manipulated with pointer.
3.
 - (a) What is deallocation? How such strategy applied in data structure. [4]
 - (b) Explain boundary tag system in details. [4]

OR

Write insertion, first-insert, last-insert and deletion algorithm of linked list.
4.
 - (a) How arithmetic expressions are evaluated using stack ? Explain it with example.
 - (b) Explain linked representation of stack with an example.

OR

Write down push & pop algorithms and various applications of stack. [8]
5.
 - (a) Define queue. How it is represented? Explain inserting and deleting algorithm in a queue. [6]
 - (b) Discuss various applications of queue. [2]

OR

 - (a) Explain how priority queue used in Round Robin Scheduling.
 - (b) Write down the algorithms used for insertion and deletion in deque? [4]
6.
 - (a) Explain pre-order, in-order and post-order tree traversal with their algorithms and example. [8]

OR

 - (a) Draw the B-tree of order 5 using following keys. [4]
65,71,70,66,75,68,72,77,74,69,83,73,82,88,67,76,78,84,85,80.
 - (b) Write an algorithm to store data in a tree. [4]



3RD SEMESTER

II-S-BSc.ITM – CBCS - Core-IV-(D.S)
2017

FULL MARK -50

Time As in the Programme

The questions are of equal value

Answer ALL question.

Section – A

Answer all questions.

[1x10]

1. What is Abstract Data Type ?
2. What is time complexity?
3. Write an algorithm to traverse linear arrays?
4. What is double Linked List ?
5. How is stack represented in memory?
6. What is priority queue ?
7. Write an algorithm for pop operation in a stack ?
8. Define degree of a node ?
9. What is the meaning of height of a binary tree?
10. What are the application of stack ?

Section – B

Answer any FIVE question. Each questions carries equal marks.

[5x8]

11. (a) Explain various data structure operations performed on non-primitive data structures.
(b) write a C program to concatenate two strings without using built-in functions.
12. (a) Differentiate between Stack and Queue.
(b) Write a program to implement queue using array.
13. (a) Write a program to insert a node at a particular position in a single Linked List.
(b) Write a program to delete a node from the first position of a circular Linked list.
14. What is the ADT of double linked list? What are the drawbacks of dynamic implementation of linked list?
(b) Write the functional block to represent a polynomial using linked list.
15. (a) Write the ADT and features of stack data structure.
(b) Write a program to implement liner queue operations statically.
16. (a) Define all the component of a Tree. Explain binary Tree.
(b) $((A+B/C)*D \wedge E)+F$ Convert the above infix expression to prefix and postfix from.
17. Write the algorithm of Bubble sort. Evaluate the algorithm.



3RD SEMESTER

II-S-B.SC. (H)-Comp.Sc.- Core – CC – (D.S) –R & B
2018

Full Marks-50

Time-As in the programme

The figure in the right hand margin indicate marks

Answer ALL questions.

GROUP-A

1. (a) Explain the physical implementation of Binary Tree. [1x10]
(b) What is Buddy System?
(c) Classify Data Structure.
(d) What is Heap Tree ?
(e) Evaluate the postfix expression 5,4,6,+,* ,4,9,3,/ ,+,* .
(f) Write down the application of linked lists.
(g) Define Double Circular Linked Lists.
(h)What do you mean by Expression Tree?
(i) Write down the applications of Stack.
(j) Define Array.

GROUP-B

2. (a) What is Multi-Dimensional Array ? Write a program to enter a 3x3 matrix and display the lower triangular matrix. [8]
OR
(a) Write a program to multiply two 3x3 matrices. [8]
3. (a) Perform the following operations in a Single Linked List. [8]
(i) Add a node at the beginning of the list.
(ii) Delete a node from a particular Position.
OR
(a)Perform the following operations in a Circular Linked List. [8]
(i) Add a node at the a particular position of the list.
(ii) Count total no of nodes present in the list.
4. (a) What is Stack ? Perform the push , Pop and Traverse Operation. [6]
(b) Find out postfix from of the expression $(A+B)*(C*D-E)*F/G$.
OR
(a) What is Recursion? Write a program to calculate factorial of a no using Recursion. [6]
(b) Explain Quick sort with example. [2]
5. (a) What is Queue? Write algorithms to add and delete element from a queue using Link List Representation. [8]
OR
(a) Explain any two example. [4x2]
(i) Dequeue
(ii)Priority Queue
(iii)Application of Queue
6. (a)Explain any two with example. [4x2]
(i) Binary Search Tree
(ii) Weighted Binary Tree
(iii) Decision Tree
OR
(a) Define Linked List representation of a Binary Tree.
(b) Explain Insertion, Deletion, Traversal Operation on Binary Tree.

3RD SEMESTER

II-S-B.SC. (H)-Comp.Sc.- Core – IV – (D.S) –R & B
2019

Full Marks-50

Time-As in the programme

The figure in the right hand margin indicate marks
Answer ALL questions.

GROUP-A

(Answer all Questions, Each carries 1 mark)

1. (I) Define the term NonLinear Data Structure.
(ii) Differentiate between double Linked list and single Linked list.
(iii) Differentiate runtime and compile time initialization of an array.
(iv) State the syntax of 2D array declaration.
(v) What is postfix notation of the expression $(c/d) * (a+d)$?
(vi) Define height of a tree.
(vii) State two properties of Height Balanced Tree.
(viii) Construct a binary search tree using the following key values. 11,22,67,89,21,9,56.
(ix) Define the term Dequeue.
(X) State two applications of Array.

GROUP-B

(Answer all questions. Each carries 8 marks.)

2. (a) What are the different types of data structures ? Explain each one in brief.
OR
(b) Write a C Program to display the result of addition of two 3*3 matrix using array
3. (a) Write an algorithm to delete node from a double linked list.
OR
(b) Write an algorithm to insert a node after a given node of a single linked list.
4. (a) What do you mean by Stack. What are the different types of stack operation. Write a program to perform each operation on a stack.
OR
Define Recursion. Write a program to calculate factorial of a number.
5. (a) Write an algorithm to delete an element at the end of a queue.
OR
(b) Write an algorithm to delete an element from the beginning of a queue.
6. (a) Explain the concept of physical implementation of binary tree in memory.
OR
(b) Construct a balanced binary search tree using the following nodes
jan,feb,mar,apr,may,jun,jul,aug,sep,oct,nov,dec.



3RD SEMESTER

III-S-B.Sc.-(ITM) – SEC – I- (Bus.Com)
2019

FULL MARKS- 80

Time – As in the Programme

The figure in the right hand margin indicate marks.

Section –A is compulsory. Answer any FIVE from Section- B

Section –A

1. (a) What is formal letter ? What is the structure of a formal letter?
(b) How to plan a formal letter? Why is it important to plan a letter in a systematic way?
OR
(c) What is the importance of courtesy while writing business letters?
(d) What are the principles of business letter writing?
2. (a) What is a job application letter ? What is the importance of a job application letter in the job market?
(b) What is a resume? What is the correct format of preparing a resume?
3. (a) What is the proper structure of report ? Give example.
(b) What are the different steps to writing a report?
OR
(c) What is a sales letter? How to write a sales letter?
(d) What is a report? What are the different types of reports?
OR
(c) What is the correct procedure of writing check list for reports?
(d) How to prepare rough draft before writing the final report?
4. (a) What is a precise ? What are the ten steps to precise writing ?
(b) Read the following passage and answer the questions that follows:
Learning Karate is a difficult task. Students begin with a white belt and train themselves for many years later so that they can earn a black belt. In between, they receive belts with colours like yellow, orange blue green and brown. Each new colour is like a reward for the students for all of their hard work . Karate students really like their rewards. Even after they earn their black belts, they don't want to stop learning. They keep training so that they can earn different leaves of black belt known as degrees to become rally good at the different self defence techniques, students practice the same technique over and over unit they can do it without any mistakes.
(i)What is Karate?
(ii) How the students of Karate earn a black belt?
(iii) How the students receive rewards after their hard work?
(iv) Why the students train themselves hard ever after earnings a black belt?
(v) How the students develop self-defense techniques?
(vi) What is the gist or underlying meaning of the passage?
(vii) Give a suitable title to the passage ?

5. ALL Questions are compulsory.

(A) Fill in the blanks:

[7x1]

- (a) One of the chairs _____ broken.
- (b) Neither you nor he _____ willing to come.
- (c) No one _____ to be criticized.
- (d) A man as well as his friends _____ ready to jump.
- (e) Every day and every night _____ it own pleasures.
- (f) Three-fourths of the crop _____ damaged.

(B) Choose the appropriate alternatives.

[7x1]

- (a) (i) The old lady heard a knock at the door last night.
- (ii) The old lady had heard a knock at the door last night.
- (b) (i) China had invaded India in 1962.
- (ii) China was invading India in 1962.
- (c) (i) I reached there last week.
- (ii) I had reached there last week.
- (d) (i) The had been living a Sultan here.
- (ii) There lived a Sultan here.
- (e) (i) Father completed the building by the end of December 2013.
- (ii) Father had completed the building by the end of December 2013.
- (f) (i) Mother had been having a bad cold yesterday.
- (ii) Mother was having a bad cold yesterday.
- (g)(i) Gandhiji took birth in Gujrat.
- (ii) Gandhiji had taken birth in Gujrat.



3RD SEMESTER

III - S- B.Sc. - (ITM) - Core - VII (Bus.acct)
2019

Full Mark-70

Time - As in the programme

The figures in the right hand margin indicates marks.

Answer All the questions.

SECTION -A

1. Answer the following questions. [1*10]
- (a) Bank account is _____accounts.
 - (b) Goodwill can be classified as_____assets.
 - (c) Depreciation is chargedon _____assets.
 - (d) Bank overdraft is_____liability.
 - (e) What is the formula of cureent ratio ?
 - (f) What are the two sides of balance sheet ?
 - (g) Receipts and payments Accounts is prepared from the _____.
 - (h) Depreciation is caluculated on the basis of _____price.
 - (i) A balance sheet discloses the _____position of the firm.
 - (j) Golden rule of personal account is debit the receiver & credit the _____.

SECTION - B

2. "Accounting is an information system ", Justify it. Discuss about users of accounting system. [8]
OR
Define subsidiary books. Discuss different types of subsidiary books. [8]
3. What is Bank reconciliation statement ? What are the causes of disagreement between Cash book and pass book ? prepare bank reconciliation statement taking imaginary transactions. [8]
OR
Define depreciation. Explain various causes of depreciation. [8]
4. Define joint stock Company. Explain its advantages and disadvantages. [8]
OR
(a) Differentiate between Profit & Loss Account and Trading Account. [4]
(b) Explain the contents of a corporate Annual Report. [4]
5. What do you mean by financial statement analysis ? Discuss its objectives. [8]
OR
Define ratio. Discuss different types of ratio. [8]
6. Define accounting concepts and accounting convention [8]
OR
Journalise the folloping transactions. [8]
- (i) Mohan started business with cash Rs. 50,000/-
 - (ii) Cash Sale Rs. 20,000/-
 - (iii) salaries paid Rs. 5,000/-
 - (iv) rent received Rs. 1,000/-
 - (v) purchases furniture for cash Rs. 1,000/-
 - (vi) purchases plant from Shyam on credit Rs. 10,000/-
 - (vii) sold goods to Ram on credit Rs. 3,000/-
 - (viii) paid to Ram Rs. 7,000/-
 - (ix) Outstanding Rent Rs. 500/-
 - (x) Receivedcash from Ram Rs. 4,000/-

III - S- B.Sc. - (ITM) - Core - VII(Bus.Acct.)

3RD SEMESTER

2017 BCA CORE JAVA

1. Explain, what is polymorphism and its types ? [7]
Explain the JVM architecture. [7]
OR
Explain the statement-public static void main(String args []). [7]
What is type casting? Give an example of casting object.
2. Write programs to illustrate compareTo() and concat() . [7]
Write a program to find smallest number in an integer array.
OR
What are the uses of static keyword in java? Write a program to reverse a number using recursion. [7]
Write short notes on : [7]
garbage collection
Scanner class
3. What is inheritance and what are its advantages? Explain it's types. [7]
Can object of abstract class be created? Justify your answer with an example. [7]
OR
What are the significances of Wrapper class ? What are the methods used in Integer class ? [7]
Explain dynamic method dispatch with example. [7]
4. Write a program to create 3 threads and set priority to each thread and execute accordingly. [7]
What is unchecked exception? Give example of an unchecked exception. [7]
OR
Write a program to print the name and salary of employees using type-2 driver . [7]
Explain the life cycle of server program. What are the methods used in the socket class? [7]
5. Write ana applet code to start and stop an audio clip. [7]
Write a program to draw an image in a Frame. [7]
OR
Discuss the life cycle methods used in applet. [7]
Write an applet code which will paint an oval, rectangle and a polygon shape and filled with red, blue and green color respectively. [7]



3RD SEMESTER

2019
SUB- CORE JAVA
BSc.CS
Full Marks - 50

Group-A

(Answer all the questions, each carries 1 mark)

1. a) Write the differences between C++ and JAVA.
- b) What is JDBC.
- c) What is type-II driver?
- d) What are the advantages of driver ?
- e) What is join() method?
- f) what is Alive() method ?
- g) What is the use of JScrollPane object?
- h) Define the term Socket.
- i) Define the term Deadlock.
- j) What is multithreading?

Group-B

(Answer all questions, each question carries 8 marks)

1. a) Write a program in java to take input three side of a triangle using standard input dialog box compute the area of that triangle. Show the output using message dialog box.
OR
b) Discuss all important features of JAVA.
2. a) What are the advantages of constructor Overloading. Give an example of constructor overloading.
OR
b) Explain the techniques of garbage collection and finalization.
3. a) What is interface? Illustrate the behavior of interface by example.
OR
b) Explain boxing, unboxing, autoboxing, autounboxing.
4. a) Give an example of nested try and catch blocks.
OR
b) Write a program to create your own exception class and handle your own exception.
5. a) Explain event delegation model of event handling.
OR
b) Write an applet program to pass student information such as name, roll number, mark secured and full mark as parameter. Compute percentage and show all information.



3RD SEMESTER

2018 SUB- CORE JAVA ITM

1. Answer all questions. [1x10]
 - a) What is Object Oriented Programming ? How it is different from Procedural concept ?
 - b) What is an Object ? How to allocate memory for objects ?
 - c) Can a method be overloaded based on different return type but same argument type ?
 - d) "Write Once and Run Anywhere"-Supports this statement with proper reasoning .
 - e) What is constructor ? When does the compiler supply default constructor for a class ?
 - f) What is the difference between the file >> and >>> operators ?
 - g) "Java class can be used both as an applet as well as an application"- Support this statement with an example .
 - h) What is the importance of synchronization in java ?
 - i) What is the difference between & operator and && operator ?
 - j) Differentiate between sleep() and wait() .
 2. a) "java is called Machine Independent Language" - Justify this statement with proper explanation ? [4]
b) Explain various access specifiers supported by java with examples . [4]
 3. a) Write a java program to illustrate "Constructor Overloading". [4]
b) How packages differ from Interfaces ? Explain it with a suitable example. [4]
 4. a) Describe the life cycle of java thread. [4]
b) Write a program to find the product of two matrixes. [4]
 5. a) Write a java program to interchange the rows and columns of a given matrix. [4]
b) Write a java program to demonstrate multithreading operation. [4]
 6. a) What is thread synchronization? Discuss with an example . [4]
b) Discuss various types of exceptions available in java and how they are handled ? [4]
 7. a) What do you mean by static class and static method ? Can we create an instance of an abstract class ? Justify your answer with an example ? [4]
- Write a program to perform the following functions using classes, objects, constructors and destructors wherever necessary (i) Read 5 subjects marks of 5 students (ii) Calculate the total and print the result on the screen [4]



3RD SEMESTER

2019 SUB-CORE JAVA ITM

1. Write the answer of the following questions. [2 x 5]
What do you mean by encapsulation ?
What is the use of abstract data type in java ?
Write the output of the following statement where
int a = -8, b = 4; (a) ++b << 1 ; (b) b-a >> 2 ;
Differentiate between object and class
What are the final variable, final method and final class ?
2. How object-oriented paradigm is different from structured Programming ? Discuss the benefits and application OOPs.
3. Write a program in java that asks the user to choose "circle" or "triangle". On choosing "circle" he/she has to enter its radius. If "rectangle" in choosen, he/she in prompted to input the length and breadth of its sides. Use an overloaded method to calculate the area and output the value on the screen.
4. Define a constructor. Explain the types of constructor. Is it possible to overload a constructor ? Justify your answer using an example .
5. What is an applet? How a java applet in different from a java application? Explain.
6. What is an instance ? Explain the implementation of multiple inheritance using interface with the help of some program .
7. What is AWT ? Briefly explain various AWT controls available in java ?
8. Explain about JDBC. Explain the different types of JDBC Drivers .



3RD SEMESTER

2018
SUB-DBMS
BSc. CS
GROUP - A

(Answer All questions. Each carries 1 mark)

1.
 - i. Define the term Database Management System.
 - ii. Differentiate between weak entity set and strong entity set.
 - iii. Differentiate stored and derived attribute.
 - iv. Differentiate between Relational calculus and Relational Algebra.
 - v. Differentiate between Natural join and Equi join .
 - vi. What is the syntax of Select operation ?
 - vii. Define 2NF.
 - viii. State two properties of File Structurer .
 - ix. Define the term Hashing .
 - x. State two applications of Query Processing .

GROUP - B

(Answer All questions. Each carries 8 marks)

2.
 - a) Construct the ER-diagram of university Employee Management System .
OR
 - b) Define the term DBMS. What are the different advantages of DBMS over traditional file system? Explain each one in brief .
3.
 - a) Write short notes on the following operations: Project, Join, Rename
OR
 - b) What are the different types of data model used in DBMS ? Explain the structure of relational data model .
4.
 - a) Explain the various types of constraints used in data model ?
OR
 - b) Write short notes on ER and EER to Relational mapping .
5.
 - a) What are the different types of normal forms ? Explain each one in brief with suitable example.
OR
 - b) Define the term functional dependency. State the Inference Rules for functional dependency.
6.
 - a) Define the term "Hashing". What are the different types of hashing techniques ? Explain each one in brief .
OR
 - b) Write short notes on :
 - i. Query Optimization
 - ii. Query Processing



3RD SEMESTER

2018 SUB- DBMS ITM

1. Answer all questions. [1x10]
- a) Differentiate between an attribute and a value set ?
 - b) What is storage manager ?
 - c) Define SQL .
 - d) What is functional dependency?
 - e) What is the use of disk buffer ?
 - f) Define multivalued data attribute ?
 - g) What is optimization in database ?
 - h) What do you understand of data dependency ?
 - i) Explain the term attribute and relations ?
 - j) What is weak entity ?
2. a) Explain Architecture of DB ? [4]
b) What is concept of Database ? How it is intracted with database ? [4]
OR
c) Explain details use of relational database of idenifiers for relations? [8]
3. a) What is ER-diagram ? Explain all the categories of attributes ? [4]
b) Draw ER diagram for Library Management System ? [4]
OR
c) What are the types of relationship ? Explain with example . [4]
d) Explain how ER diagram is reduced into relations. [4]
4. a) What is Normalization ? Explain steps of Normalization process . [4]
b) Why data simplification is required, explain? [4]
OR
c) Define 1NF . Explain how 1NF is different from 2NF ? [8]
5. a) Discussed various steps followed during query optimization. [4]
b) Discuss the mechanism used to read data from or write data to the disk ? [4]
OR
c) What are the important factors that influence physical database design ? [4]
d) Define goal tuning ? What are the typical inputs required to the tuning process ? [4]



3RD SEMESTER

2019 SUB- DBMS ITM

1. Write the answer of the following questions [1x10]
 - I. What is the use of RAID ?
 - II. What is meant by disk buffer ?
 - III. What is an instance and schema of the database ?
 - IV. What is meant by query optimization ?
 - V. What is weak entity ?
 - VI. What is functional dependency ?
 - VII. What is loss less join property ?
 - VIII. Define Metadata ?
 - IX. What is an instance and schema of the database ?
 - X. Define stored and Derived attributes ?
2. a) Elaborate the three-level Architecture of database system ? [4]
b) Explain the responsibilities of a Database Administrator ? [4]
3. What do you understand by relational model of database system ?
Elaborate the major characteristics of relational database management system ? [8]
4. a) What is ER-diagram ? Explain all the categories of attributes ? [4]
b) Draw ER-diagram for college management system ? [4]
5. Explain the following SQL statement with syntax and examples . [4]
 - i. ROLLBACK
 - ii. GRANT
 - iii. DROP
 - iv. GROUP BY
6. What is Normalization ? Discuss the 1st, 2nd, 3rd and BCNF normal forms ? [8]
7. a) Define Indexing . Discuss type and order of index with example. [4]
b) What is query processing ? Discuss various steps of query processing . [4]
8. What are the various operations used in Relational algebra ? Discuss each with an example .[8]



3RD SEMESTER

2020
Sub-DMBS
BSc.CS
Group-A

(Answer all the questions. Each question carries 1 mark)

1. a) Define the term Database Management System .
- b) Differentiate between weak entity set and strong entity set .
- c) Differentiate single and multi value attribute.
- d) What are the different types of aggregate functions ?
- e) Differentiate between Natural join and Equi join.
- f) What is the syntax of Alter command ?
- g) Define 2NF .
- h) State two properties of UML Design.
- i) Define the term Hashing .
- j) State two applications of Query Processing .

Group-B

(Answer all the questions. Each question carries 8 marks)

2. a) Construct the ER-diagram university Online Air Ticket Reservation System
OR
- b) Define the term DBMS . What are the different advantages of DBMS over traditional file system? Explain each one in brief.
3. a) Write short notes on the following operations :
Project, Join, Rename
OR
- b) Write the different types of data model used in DBMS ? Explain the structure of relational data model .
4. a) State the functionality of any five SQL commands with syntax .
OR
- b) Write short notes on ER and EER to Relational mapping .
5. a) What are the different types of normal forms ?
Explain each one in brief with suitable examples.
OR
- b) What are the different types of Diagrams used in UML Design ? Explain each one in brief with suitable example.
6. a) Define the term "File". What are the different types of File management techniques ?
Explain each one in brief .
OR
- b) Write short notes on :
 - i) Query Optimization
 - ii) Disk Storage



SEMESTER - IV

4th SEMESTER

IV-S-BSc.-(ITM) –GE-IV- (QT)

2018

FULL MARK – 50

TIME – As in the programme

The figure in the right hand margin indicate marks.

Answer ALL question.

1. Answer all Question . [1x10]

- (a) What is Optimistic Time ?
- (b) Define feasible solution? How it is different from optimal solution.
- (c) What is zero -one programming ?
- (d) What is equilibrium of steady state?
- (e) Define non-negativity condition.
- (f) Explain the meaning of statistical Decision theory.
- (g) What is expected value of with perfect information?
- (h) Differentiate between opportunity loss and expected opportunity loss?
- (i) Define Pay Off.
- (j) What is even slack ?

2.(a) Use the graphical method to solve the following LLP. [8]

Minimize $Z = -X_1 + 2X_2$; subject to the constraints:

$$-X_1 + 3X_2 \leq 10, X_1 + X_2 \leq 6, X_1 - X_2 \leq 2 \text{ and } X_1 > 0, X_2 \geq 0.$$

OR

(b) Describe the graphic and Simplex methods of solving Linear programming problem. Why simplex method Considered superior to graphic method? Explain.

[4]

(c) Discuss the Limitations of Linear programming.

[4]

3.(a) Obtain an initial basic feasible solution to the following cost matrix using Vogel's method. [8]

Destination →	1	2	3	4	Supply
Source ↓					
1	21	16	15	3	11
2	17	18	14	23	13
3	32	27	18	41	19
Demand	6	10	12	15	43

(b) Write the various steps used in solving transportation problem by North-West Corner rule. [4]

(c) Write brief note on Vogel's Approximation method.

[4]

4th SEMESTER

4.(a) Explain the usefulness of PERT and CPM techniques in decision making. [4]

(b) Discuss the meaning of crashing in network techniques? [4]

OR

(c) Draw up a network diagram from following activities and the critical path and slacks of the activities. [4]

Job	A	B	C	D	E	F	G	H	I	J	K
Job Time (Days)	13	8	10	9	11	10	8	6	7	14	18
Immediate Predecessors	-	A	B	C	B	E	DF	E	H	GI	J

5.(a) Discuss the advantages and Limitation of Decision Theory. [4]

(b) Explain expected value of perfect information technique with example. [4]

OR

(c) Explain expected monetary value technique with example? [4]

(d) Discuss state of uncertainty. [4]

6.(a) What do you mean by Markov chains? State how can they be used for predicting the sales-force requirements. [4]

(b) Explain the essential characteristics of game. [4]

OR

(c) Discuss characteristics and use of Markov process. [4]

(d) Discuss various types of game under game theory. [4]

4th SEMESTER

IV - S – BSc.- (ITM) – GE – IV – (QT)
2019

Full Marks-50

Time –As in the Programme

The questions are of equal value.

Answer SIX questions including Q.No.1.

1. Write the answer of the following questions. [2x5]
(i) How to calculate expected value of project management?
(ii) Define the following.
(a) Infeasibility, (b) Two-person zero sum game.
(iii) Define and difference between artificial variable and slack variable.
(iv) Define Monte-Carlo method in simulation.
(v) Distinguish between primal and dual problem?
2. Find out basic feasible solution by Vogel's approximation method from the following conditions. [8]

Origin	Destination				Supply	
	1	2	3	4		
1	20	22	17	4	120	
2	24	37	9	7	70	
3	32	37	20	15	50	
Demand		60	40	30	110	240

3. Solve graphically the following linear programming problem. [8]

Minimize $Z = -X_1 + 2X_2$; subject to the constraints:

$$-X_1 + 3X_2 \leq 10, X_1 + X_2 \leq 6, X_1 - X_2 \leq 2 \text{ and } X_1 > 0, X_2 \geq 0.$$

4. Answer the following. (Answer any TWO): [4X2]
(a) Hungarian Assignment Method.
(b) Degeneracy.
(c) Least Cost Method.
5. Explain the following term in details. (Answer any TWO) [4X2]
(a) PERT
(b) Float & Slack analysis
(c) Project time crashing
6. Discuss various assumptions of Markov analysis. [8]
7. Explain in details. (Answer any TWO): [4X2]
(a) Zero-sum in the context of game theory.
(b) Saddle Point.
(c) Pure strategy vs mixed strategy.
8. Using Simplex method build-up a linear programming model for solution of the following assignment Problem. [8]

Jobs	Machines			
	I	II	III	IV
A	10	20	25	15
B	15	30	18	28
C	40	20	16	20
D	25	30	24	15



4th SEMESTER

IV-S-B.Sc. -(H)-CBCS-CC-IX -(CN) -R & B

2019

Full Marks-50
Time-As In the program

The figure in the right hand margin indicates marks.

Answer All questions.

GROUP-A

1. (Answer all questions, each carries 1 mark)

- Differentiate between logical addressing and physical addressing.
- Differentiate between mesh topology and bus topology.
- Define the term "transmission mode". What are the different types of transmission mode?
- Define the term "multiplexing".
- Plot the time domain of the bit stream 1010111 using Manchester.
- Define the term "Routing".
- Define the term Bluetooth.
- Plot the time domain of the bit stream 11110010 using AML.
- Differentiate between connection oriented and connection less Services.
- Define the term IP addresses.

Group-B

(Answer all question, each question carries 8 marks)

- (a) What are the different type of networks State the characteristics of each one.
OR
(b) State the functionality of application and physical layer of OSI model.
- (a) What are the different types of transmission techniques. Explain each one in brief.
OR
(b) What are the different types of digital encoding techniques? State the characteristics of any two of them with suitable example.
- (a) What are the different types of multiplexing techniques used in network system? Explain each one in brief.
OR
(b) What are the different types of transmission media? Explain each in brief.
- (a) What are the different types of error detection techniques used imetwork system? Explain each one in brief.
OR
(b) State the concept of "hamming code" to correct the error of 7bit ASCII. The given bit sequence is 1010011, using hamming code, find the code which is sent.
- (a) Explain the concept of "SONET".
OR
(b) explain the concept of "ATM".



4th SEMESTER

2019

Full Marks -50

Time –As in the programming

SUB- HTML

The figure in the right hand margin indicate marks

Answer ALL Questions

1. a) Explain the Architecture of WWW in detail. [5]
b) Write the HTML code to generate a Web Page in the format given below: [10]
 - i. Background colour of the page should be 'Cyan'.
 - ii. Text style should be Comic Sans MS and colour should be Red.
 - iii. Picture used in the page is the file 'activity.jpg'.
 - iv. Table should have a border of colour blue?
 - v. Use the concept of nested lists for creating the list given in the web page with specified bullets.
2. a) Explain the structure of java script program. [5]
b) Write a java script program to calculate simple interest. [5]
3. a) list the data types in java script with suitable example. [5]
b) What are the captions? Why using styling create a table explain with a suitable example? [5]
4. a) What do you mean by FRAME? How these can be created in webpage using HTML. [5]
b) Design a login page using CSS and java script like:- [10]

The diagram shows a login page layout within a rectangular frame. At the top center is a circle labeled 'Image'. Below it is a rectangular box containing the text 'Userid: _____' and 'Password: _____', followed by a rounded rectangular button labeled 'Login'. Below this box is the text 'For New User [Signup](#)'. To the right of the diagram, there are two arrows pointing to the box: one labeled 'Colour=Aqua,Pink' and another pointing to the 'Image' circle.



4th SEMESTER

IV – S – B.Sc.- (H) – CBCS -
CC – X – (CG) – R & B
2019

FULL MARKS -50

Time As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

GROUP – A

1. (Answer ALL questions, each question carries 1 mark)
- Define the term Projection.
 - What are the different types of 3D transformations?
 - What do you mean by Fractal?
 - What do you mean by inverse transformations?
 - What do you mean by Animation?
 - What is Resolution?
 - Define the term aspect Ratio.
 - Define the term Digital Image.
 - Differentiate between A Buffer and Z Buffer Method.
 - State any two properties of Spline curve.

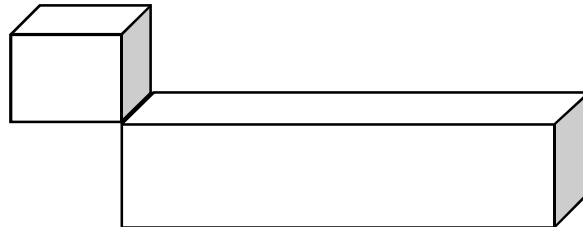
GROUP - B

(Answer ALL , each question carries 8 mark)

1. (a) Which raster locator would be chosen by bresenham's algorithm when converting a line (1,1) to (8,5)
- (b) Find out the intermediate points of a line having end points A (0,0) and B (4,5) using DDA algorithm.
- OR
- (c) Draw a circle having radius 9cm and centre at (2,2) using Bresenham's midpoint Circle Algorithm.
- (d) Draw an ellipse major with axis (2a) =16 and Minor Axis (2b)=12.
2. (a) A circle with radius 50mm & centre A (10,10) is to be converted into the ellipse with major axis 90mm and minor axis 60mm. Find the total transformation.
- (b) State and explain Cohen-Sutherland Polygon Clipping Algorithm.
- OR
- (c) Perform the following transformations independently and find the resultant Transformation Matrix.
- Scale the object two times in X-direction and three times in Y-direction.
 - Rotate the object by 90° anti clockwise.
 - Translate one unit in X-direction and two unit in Y-direction.
- (d) A cube of length 10 units having one of its corner of origin (0,0,0) and three edges along three principal axis. If the cube is to rotate about Z- axis by an angle of 45° in counter clockwise direction, then calculate the new position of the cube.
3. (a) The co-ordinates of four control points relative to a curve are given by $p_1 (2,3,0)$, $p_2 (3,3,0)$ and $p_4 (3,2,0)$.
write the equation of Bezier curve. Also find the co-ordinates points on the curve for $u=0, 1/4, 1/2, 3/4$,

4th SEMESTER

1. also plot the Beizer Curve on Graph.
(b) Create constructive Solid Geometry (CSG) of the following model using set theory without dimension



OR

- (c) State the characteristics of fractal. Also explain the concepts of fractal geometry.
(d) Explain the concepts of quadratic surface with its equation.
4.(a) What do you mean by visible surface detection? State and explain Scan Line method of visible surface detection .

OR

- (b) State the steps of BSP Tree Method.
5.(a) Differentiate between Gouroud shading and phong shading method.

OR

- (b) What do you mean by Illumination model ? state and explain any two shading techniques .



SEMESTER - V

5th SEMESTER

B.sc Computer Science-(H) –DSE-I-(I.S)

2020

Full Mark-50

Answer ALL Question

Group-A

(Answer all questions. Each question carries 1 mark)

1. (i) What is the difference between public key cryptography and private key cryptography .
- (ii) What I the difference between Modification and Fabrication.
- (iii) Calculate the message digest of the integer 14365711.
- (iv) Calculate the row and column number if the 6 bit input is 101010 in S-Box substitution.
- (V) What is salami attacks?
- (vi) What are the differences between DES and DES-3 ?
- (vii) What do you mean by Digital Signature?
- (viii) Define the term Substitution Chiphers.
- (ix) State any two properties of Electronic Code Book Mode.
- (x) What do you mean by virus.

Group-B

(Answer all questions Each question carries 8 marks.)

- 2 (a)What are the different types of security principles used in a network system? State each one.
OR
(b) State the details of one round of DES.
- 3 (a) State RSA algorithm If $N = 187$ and the encryption key (E) is 17. Then find out the corresponding private key (D).
OR
(b) State HMAC algorithm.
4. Write short notes on: (Any Two)
 1. File Protection
 2. Memory Protection
 3. Security Threats
5. (a) What are the different types e-mail security protocol ? State the steps of any one protocol?
OR
(b) What are different types of firewall architecture? Explain each one in brief?
6. Write short notes on: (Any Two)
 - a. Security Planning.
 - b. Organizational Security Policy.
 - c. Cyber Security law.OR
(b) Write short note on:
 - (i) Query Optimization
 - (ii) Disk Storage



5th SEMESTER

V-S-B.Sc(ITM)-Core-XII-(S.E)
2018

Full Marks- 50

Time- As in the Programme

The figure in the right hand margin indicates marks.

Answer ALL questions

1. a) Discuss the various phases of process model for prototype development. [10
OR
- b) Discuss the phases involved in Extreme programming release cycle. [10
2. a) Explain the functional and non-functional requirement of a system.
OR
- b) Discuss the fundamental steps of requirement change management.
- c) Write short note on requirement validation.
3. a) What are the object oriented features? Explain the relationship between the classes in UML diagrams. [10
OR

Write short notes on the following:

- a) User testing
- b) White-Box testing
4. a) Describe the following.
 - i) Safety Specification
 - ii) System procurement.OR
- a) Discuss the important dimension and properties of software dependability.
5. a) Discuss briefly about security risk management. [10
OR

Write short notes on the following:

- a) Reliability Testing
- b) Dependable Process.



5th SEMESTER

V-S-B.Sc.-(ITM)-P-C-XIII-(SE)
2020

Full Marks- 50

Time- As in the Programme

The figure in the right hand margin indicates marks.

Answer ALL questions

GROUP-A

(Answer all questions. Each question carries 1 mark)

1. a) What is Software Process? [2*5
b) Differentiate between user testing against release testing?
c) What are the requirements for software maintenance?
d) Differentiate between safety and reliability specification.
e) What is legacy software system?
2. Define software engineering ethics. How it is useful in software development ?
Explain various phases of waterfall model. [8
OR
Explain different process activities used in software development. [8
3. What is software requirement? Discuss types of
4. Software requirement. [8
OR
Define DFD. What are the guidelines to construct DFD? Draw the level-1 DFD of
Hospital Automation system. [8
4. Briefly explain different levels of software testing. What is test driven development ?
How TDD is different from behaviour driven development? [8
OR
Define software evolution. What is its importance? Explain spiral model of
development and evolution. [8
5. What is system development? How it is different from system operation ?
Discuss various dimensions of dependability? And also explain how to achieve
dependability? [8
OR
Define software reliability. Discuss various models of software reliability and also
explain how to measure software reliability ? [8
6. Define reliability testing. What are the factors affecting reliability testing ?
Discuss its types. [8
OR
Discuss the key issues of system survivability. How it can be improved for
security and safety of the software system. [8



5th SEMESTER

V-S-B.Sc.-Comp.Sc.-(H)-CC-XII-(SE)
2020

Full Marks- 50

Time- As in the Programme

The figure in the right hand margin indicates marks.

Answer ALL questions

GROUP-A

(Answer all questions. Each question carries 1 mark)

1. i) What is the difference between Functional and Non-functional requirement?
- i) What is cyclometric complexity?
- ii) State any two problem of software engineering?
- iii) Define the term KLOC?
- iv) What is User Testing?
- v) What are the differences between Black Box and White Box testing?
- vi) What do you mean by context model?
- vii) Define the term SRS.
- viii) State any two objectives of Requirement Analysis.
- ix) What do you mean by Object Oriented Design.

GROUP-B

(Answer all questions. Each question carries 8 marks)

2. a) Discuss important activities that are carried out during Agile Software Development.
OR
a) Write short notes on: Software process models
3. a) Discuss the objectives of Requirement Analysis?
Explain how it forms the basis for development of qualitative software?
OR
b) Write the SRS for developing an Examination automation software for your college.
4. a) Why is it required to have a module having high cohesion and low coupling?
Briefly explain the types of coupling with examples.
b) What are the different types of testing? Explain each one in brief.
OR
- b) What is the significance of drawing a UML? Draw the UML for online Railway Ticket Reservation System.
5. a) Define the term Dependability. Discuss the relative properties of Dependability.
OR
a) Write short notes on: Safety Specification
6. a) Write short notes on: Process Assurance
OR
a) What are the various empirical cost estimation techniques? How it differs from heuristic cost estimation techniques?



5th SEMESTER

V-S-B.Sc.-(ITM)-CC-XII-(Data commn.)
2018

Full Marks-50

Time-As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. (a) Explain functions and services of different layers of OSI model. [5]
(b) Discuss types of addressing used in employing TCP/IP protocol. [5]
OR
(c) Explain the functions, protocols and services of each layer of TCP/IP model? [5]
(d) Define computer network. Discuss various types of networks topologies and their advantages and disadvantages. [5]
2. (a) Discuss characteristics and advantages of digital signals. [5]
(b) Discuss advantages and disadvantages of digital signals. [5]
(c) Define transmission impairment. Discuss various reasons for transmission impairment. [5]
(d) Discuss different techniques of digital to analog transmission. [5]
3. (a) Discuss different types of transmission medium used in communication network. [5]
(b) Discuss various types of dedicated lines used in telephone Network for data communication. [5]
OR
(c) Define multiplexing. Discuss various types of multiplexing used In communication. [5]
(d) Write short notes:
(i) Dial-up modem
(ii) Structure of circuit switch
4. (a) What are the various types of error correcting techniques? [5]
(b) Explain types and characteristics of Standard Ethernet? [5]
OR
(c) What are the different parts of frame? Explain its types.
(d) Define Channelization. Discuss types of multiple accesses used in channelization. [5]
5. (a) Explain about the different types of connecting device in computer networks? [5]
(b) Write short notes :
I) Virtual tributaries OR
II) Cellular telephony OR
(c) Discuss SONET network elements and layers in details. [5]
(d) Explain different types of backbone network. [5]



5th SEMESTER

V-S-B.Sc.-(ITM)-P-C-XII-(DC)
2020

Full marks-50

Time- As in the Programme

The figure in the right hand margin indicates marks.

Answer all questions including Q.No.-1.

1. Answer all [2x5]
 - (a) Write the function of Media Access Control?
 - (b) How is repeater different from an amplifier?
 - (c) What is STS multiplexing ?
 - (d) Compare an uplink with a downlink.
 - (e) Distinguish between byte oriented and bit-oriented protocol?
2. Explain different layers function and services of TCP/IP. What is the main difference between TCP & UDP? [8]

OR

What is data communication? Discuss the difference between connectionless communication and connection-oriented communication? Give examples of protocol of each type. [8]
3. Discuss with their advantages and disadvantages of Digital to Analog signals and viceversa. [8]

OR

Explain different types of transmission mode with their advantages. [8]
4. Describe the goals of multiplexing. Explain different multiplexing techniques used in bandwidth utilization. [8]

OR

Discuss various transmission medium with examples. Also explain how guided media differ from unguided media? [8]
5. What is block coding? How can errors be detected by using block coding and corrected? Explain how hamming distance contribute for error control? [8]

OR

Define Channelization. Discuss different protocols of Channelization. [8]
6. What is VLAN? Explain VLAN in details. How does a VLAN reduce network traffic and save company time and money? [8]

OR

Briefly explain SONET Architecture and function of all its layers. [8]



5th SEMESTER

V – S – B.Sc. – (ITM) – Elect – II – (Fin. Mgt.)
2018

1. (a) Discuss different scope of financial management. [5]
(b) Discuss types of return with example. [5]
OR
(c) Explain various functions of finance? [5]
(d) Differentiate between diversifiable and non-diversifiable risk the only relevant risk? [5]
2. (a) Discuss various methods of computing overall cost of capital. [5]
(b) Explain briefly different ingredients of cash flow streams. [5]
OR
(c) Discuss important evaluation techniques for capital budgeting. [5]
(d) Examine critically the different approaches to the calculation of cost of equity capital. [5]
3. (a) Explain briefly the traditional and Modigliani-Miller approach to the theory of capital structure. [5]
(b) Discuss various propositions of Net operating Income (NET) approach. [5]
OR
(c) Discuss various assumptions related to valuation net income approach. [5]
(d) Discuss EBIT-EPS analysis with example. [5]
4. (a) Explain cash management techniques with example ? [5]
(b) Define EOQ. How can it be computed? What are the limitations of the EOQ model? [5]
OR
(c) Explain the ABC inventory control system and its limitation. [5]
(d) Discuss types of cost with example. [5]
5. Write short notes : (Answer any TWO) [10]
(a) Investment Decision
(b) Profitability Index Method.
(c) Walter's Model.
(d) Credit Policy



5th SEMESTER

V-S-BSc.-(ITM) – Elect-II – (Fin. Mgt)
2018

Full Marks - 50

Time – As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. (a) Discuss different scope of Financial management. [5]
(b) Discuss types of return with example. [5]
OR
(c) Explain various functions of Finance? [5]
(d) Differentiate between diversifiable and non-diversifiable risk. [5]
Why is the non-diversifiable risk the only relevant risk? [5]
2. (a) Discuss various methods of computing overall cost of capital. [5]
(b) Explain briefly different ingredients of cash flow streams. [5]
OR
(c) Discuss important evaluation techniques for capital budgeting.
3. (a) Explain briefly the traditional and Modigliani-Miller approach to the theory of capital structure. [5]
(b) Discuss various propositions of Net operating Income (NET) approach. [5]
OR
(c) Discuss various assumptions related to valuation net income approach.
(d) Discuss EBIT-EPS analysis with example. [5]
4. Explain cash management techniques with example ? [5]
(b) Define EOQ. How can it be computed ? What are the limitations of the EOQ model? [5]
OR
(c) Explain the ABC inventory control system and its Limitation. [5]
5. Write short notes : (Answer any TWO) [10]
(a) Investment Decision
(b) Profitable Index Method.
(c) Walter's Model.
(d) Credit Policy.



5th SEMESTER

2020

ITM

Sub- FM

Full Marks - 50

Time - As in the Programme

1. Answer the Following
 - a. What is Future value?
 - b. Define cost of Retained earning?
 - c. Difference Between Explicit and implicit cost?
 - d. What is holding period of return?
 - e. Explain Profit Maximization?
 - f. Define collection Cost?
 - g. What is cost of Debt?
 - h. What is safety stock?
 - i. Define trade-off theory?
 - j. What is absolute return?
2. What do you mean by financial Management? Explain the scopes of financial Management .
Or
What is risk ? write the difference between systematic risk and unsystematic risk ?
3. Write a note on Principle of capital budgeting and also explain the objectives of capital budgeting
.
Or
Explain briefly different ingredients of overall Cost of Capital .
4. Explain various criticism of Net operating approach ?
Or
Explain briefly the Modigliani-Miller (MM) approach to the theory of Capital Structure .
5. Define EOQ .How it can be computed ? What are the limitation of EOQ model ?
Or
Explain Cash Management Techniques with Examples ?
6. Write short notes .(Answer any Two)
 - a. Aging Analysis
 - b. Combined leverage
 - c. Re-ordering Level
 - d. ABC Analysis



5th SEMESTER

2019

FullMarks- 50

Time –As in the programme

SUB-ANDROID

The figure in the right hand margin indicate marks.

Answer All questions.

Group-A

1. (Answer All Questions, each question carries 1 mark)
- I. What is an activity in Android?
- II. What is the life cycle of service in android?
- III. How many applications are there in a given task in android?
- IV. What are the return values of on StartCommand() in android services?
- V. What is application class in android?
- VI. What is LastKnownLocation in Android?
- VII. What is JSON exception in android?
- VIII. What is off-line synchronization in android?
- IX. What is ANR responding time in android?
- X. Through which data can be read from local source XML in android?

Group-B

(Answer all question, each carries 8marks)

2. (a) What are the different type of android operating system ? State each one.
OR
(b) State the architecture of Android.
3. Write short notes on any TWO:
 - I. Installing Eclipse with ADT plug-in:
 - II. Installing Virtual machine for Android sand Which/ Jelly bean(Emulator).
4. (a) Explain the concept of user interface Architecture.
OR
(b) State the active life cycle.
5. (a)Write an application using Text Field.
OR
(b) Write an application using Button.
6. Write short notes on any ONE:
 - I. SQLite database
 - II. Application of Android Programming.



5th SEMESTER

VI – S – BSc.- (ITM) – Core – XV – (Prog.in NET/ASPNET)
2019

Full Marks -50

Time – As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. (a) Explain the elements of the NET Frameworks? [5]
(b) What is garbage collection ? How it is works in Asp.net. [5]
OR
(c) NET is not a programming Language. Justify and explain. [5]
(d) Discuss various components o visual studio net IDE. [5]
2. (a) Describe how to create an Asp.Net application with example? [5]
(b) What is webforms? Explain the web controls with example. [5]
(c) Design a user Registration form having fields Name,Email,Sex, Qualification, Adress with appropriate controls in Asp.Net. [5]
(d) Discuss different types of web controls used in ASP. NET. [5]
3. (a) Explain different application of Asp.Net. [5]
(b) Explain authentication and authorization in Asp. Net. [5]
OR
(c) Explain the different sections in web. Config file. [5]
(d) What is Caching ? Explain are the different types of Caching.
4. (a) What SOAP? Explain different elements of SOAP.
(b) Explain the techniques used to consume a web service. [5]
OR
(c) What is web service ? Explain how to build a web service.
(d) Write short notes on:
(i) Deploying web service
(ii) Data Adapter Type
5. (a) Explain various characteristics of ADO. NET. [5]
(b) What is debugging in ASP.NET ? Explain how to debug an application. [5]
OR
(c) Explain the working of ADO.NET. [5]
(d) Write a sample code to connect oledb database and insert into the book table having fields book name, publication name, edition, no. of pages and price of the book.



5th SEMESTER

2019

Full Marks -50

Time –As in the programming

Sub- ASP.NET

The figure in the right hand margin indicate marks

Answer ALL Questions

1. (a) Explain the elements of the .NET Framework? [5]
(b) What is garbage collection? How it is works in Asp.net. [5]
OR
(c) .NET is not a programming language. Justify and explain. [5]
(d) Discuss various components of visual studio net IDE. [5]
2. (a) Describe how to create an Asp.net application with example? [5]
(b) What is web Forms? Explain the web controls with example. [5]
OR
(c) Design a User Registration form having fields Name, Email, Sex, qualification, Address with appropriate control in Asp.Net [5]
(d) Discuss different type of web controls used in Asp.Net. [5]
3. (a) Explain different application of Asp.Net [5]
(b) Explain the authentication and authorization in Asp.Net. [5]
OR
(c) Explain the different sections in web.config file. [5]
(d) What is Caching ? Explain the different types of caching. [5]
4. (a) What is SOAP? Explain different elements of SOAP. [5]
(b) Explain the technique used to consume a web service. [5]
OR
(c) What is web service? Explain how to build a web service [5]
(d) Write short notes on: [5]
i. Deploying web service
ii. Data Adapter Type
5. (a) Explain various characteristics if ADO.NET. [5]
(b) What is debugging in ASP.NET? Explain how to debug an application [5]
OR
(c) Explain the working of ADO.NET [5]
(d) Write a sample code to connect oledb database and insert into the book table having fields book name, publication name, edition, no, of pages and price of the book. [5]



5th SEMESTER

2020
Full Marks-50
BSc.CS
SUB- ADV.JAVA
Group-A

(Answer all questions. Each question carries 1 mark)

1.
 - i. What is the difference between JSP and Servlet .
 - ii. What is the difference between Array and ArrayList.
 - iii. State two application of JSP.
 - iv. State the functionality of any two methods of HttpServletRequest.
 - v. What is life cycle of servlet ?
 - vi. What are the difference between DES and DES-3 ?
 - vii. State any two data types available in JavaScript ?
 - viii. Define the term MVC.
 - ix. State any two properties of JAR file.
 - x. What do you mean JDBC.

Group-B

(Answer all questions. Each question carries 8 marks)

2.
 - a) Write a program to search an element using array and binary search.
OR
 - b) What are the uses of ArrayList ? Write in brief along with their methods.
3.
 - a) Discuss different driver types of JDBC.
 - b) What do you mean by resultset? Write down its uses in JDBC.
OR
 - c) Write a simple JSP program to display "Utkal University" 10 times.
4.
 - a) Differentiate JSP with servlet. Write lifecycle of JSP.
OR
 - b) Write about the various Objects used in Java script.
5.
 - a) Write JavaScript code to test whether the given number is prime number or not.
OR
 - b) Write a JavaScript code to find the factorial of a given number.
6. Write short notes on any two.
 - a) JAR File
 - b) Java Beans
 - c) Error handling and debugging



5th SEMESTER

2018

Full Marks- 50

Time – As in the Programme

The figure in the right hand margin indicate marks.

Answer All the Questions.

1. (a) Write short notes on event driven language. [5]
(b) What is the use of text box control? Discuss its properties. [5]

OR

- (a) Write the steps to compile debug and run a VB program. [5]
(b) Write short notes on default and cancel property. [5]
2. Write a program to:
(a) Sort 'n' number. [5]
(b) Discuss different types of loops used in VB. [5]

OR

- (a) Write a program to illustrate the use of 'if' statement. [5]
(b) Write a program to compare two strings. [5]
3. Write a program to create a Gmail registration form. [10]

OR

Write a program to create following menu bar. [10]

Project-1			
File	Edit	View	Help
	Undo		
	Cut		
	Copy		
	Paste		

4. Write a program to design following window. [10]

5th SEMESTER

IIII

First Number :

Last Number :

<u>Number</u>	<u>Square</u>	<u>Cube</u>
1	1	1
2	4	8
3	9	27
4	16	:
:	:	:

OR

- (a) Write a program to search a key element in an integer array. [10]
- (b) Write short notes on combo box operation. [10]
5. Write a program to search the student records who belongs to "Puri".

OR [10]

- (a) Write the steps to connect to the database with a form [5]
- (b) Write a program to edit employee basic salary by incrementing salary by 13%. [5]

5th SEMESTER

V - S - BCA - software computer Graphics -
(CC - XII) (R & B)

2020

Full Marks - 70

Time - As in the Programme

Answer ALL questions.

(Each question carries equal marks.)

1. (a) Describe the software development process in brief.
(b) Explain the need for SRS.
(c) What are SDLC models available ?
(d) Explain the characteristics of Software Process.
(e) What are the different types of Software Configuration Management Plan ?
2. (a) Explain each one in brief.
(b) State and explain Quality Assurance Plan.
(c) A company needs to develop digital signal processing software for one of its newest inventions. The software is expected to have 40000 lines of code. The company needs to determine the effort in person-months needed to develop this software using the basic COCOMO model. The multiplicative factor for this model is given as 2.8 for the software development on embedded systems, while the exponentiation factor is given as 1.20. What is the estimated effort in person-months ?
(d) Write short notes on : Project Scheduling.
3. (a) Explain the principles of function oriented design.
(b) Write short notes on : Structured Design Methodology.
Write short notes on (any FOUR) : Data Flow Diagrams.
(i) Structured Charts.
(ii) UL Structured English.
(iii) Data Dictionary.
(iv) Hierarchical Input Process Output diagrams.
(v) Entity Relationship Diagrams and Decision tables.
4. (a) What do you mean by Cohesion ?
What are the different types of Cohesion ? State and explain each one in brief.
(b) Write short notes on : Cyclomatic Complexity.
(c) What do you mean by Verification ? What are the different types of Verifications
Explain each one in brief.
(d) Write short notes on : Data Binding.
5. (a) What do you mean by Testing ? What are the different types of Testing ?
State and explain each one in brief.
(b) A software was tested using the error seeding strategy in which 20 errors were seeded in the code. When the code was tested using the complete test suite, 16 of the seeded errors were detected. The same test suite also detected 200 non-seeded errors. What is the estimated number of undetected errors in the code after this testing*
(c) Differentiate between Black Box Testing and White Box Testing.



5th SEMESTER

V - S - BCA - Computer Graphics - (CC - XII) (R & B)
2020

Full Marks - 70

Time - As in the Programme

Answer ALL questions.

(Each question carries equal marks.)

1. (a) Which raster locator would be chosen by Bresenham's algorithm when converting a line (0,0) to (10,8).
(b) Find out the intermediate points of a line having end points A(0,1) and B(5,6) using DDA algorithm.
OR
(c) Draw a circle having radius 10cm and centre at (3,3) using Midpoint Circle Drawing Algorithm.
(b) Explain the application areas of computer graphics. 2.(a) What are the different types of basic 2D transformation ? Explain each one in brief.
(b) State and explain Cohen – Sutherland Polygon Clipping Algorithm.
OR
(c) Perform the following transformations independently and find the resultant Transformation Matrix.
(i) Scale the object two times in X-direction and three times in Y-direction.
(ii) Rotate the object by 90° clockwise.
(iii) Translate three units in X-direction.
(b) Write short notes on : Polygon Clipping.
3. (a) The co-ordinates of four control points relative to a curve are given by p1(1,2), p2(3,4), p3(6,-6) and p4(10,8). Write the equation of Bezier curve. Also find the co-ordinates points of the curve for step size 0.2. Also plot the Bezier Curve on graph.
(b) Write shortnotes on : Constructive Solid Geometry (CSG).
OR
(b) Explain the properties of Bezier Curve .
(c) Explain the concept of quadratic surface with its equation.
4. (a) Given a 3D object with coordinate points A (0, 3, 3), B (3, 3, 6), C (3, 0, 1), D (0, 0, 0). Apply the scaling parameter 2 towards X axis, 3 towards Y axis and 3 towards Z axis and obtain the new coordinates of the object.
(b) Given a 3D triangle with points (0, 0, 0), (1, 1, 2) and (1, 1, 3). Apply shear parameter 2 on X axis, 2 on Y axis and 3 on Z axis and find out the new coordinates of the object.
OR
(b) What do you mean by three dimension transformations ? What are the different types of 3D transformations ? Explain each one in brief.
(c) Given a 3D triangle with coordinate points A (3, 4, 1), B (6, 4, 2), C (5, 6, 3). Apply the reflection on the XY plane and find out the new coordinates of the object.
5. (a) What do you mean by Visible surface detection ? What are the different types of Visible surface detection ? State and explain each one in brief.
OR
(b) What are the different types of Shading techniques ? State and explain each one in brief.

V - S - BCA - Computer Graphics - (CC - XII)(R & B)



5th SEMESTER

V - S - BCA - Accounting & Financial Management - (P - DSE - I)(R & B)
2020

Full Marks - 70

Time - As in the Programme

Answer ALL questions.

(Each Question Carries Equal Marks.)

1. a) Describe the Principles of Accounting.
b) Explain the Standards of Accounting.
OR
c) Habib Ullah Sadiq is wholesale trader; Record the following transactions in Accounting Equation ?
 - i. Commence business with cash Rs. 200,000 and Land Rs. 50,000.
 - ii. Bought merchandising for cash Rs. 80,000.
 - iii. Cash sales of worth Rs. 25,000.
 - iv. Bought goods on credit from Salman of worth Rs. 50,000.
 - v. Sales on account to Ali Raza Rs. 12,000.
 - vi. Purchase furniture of the value of Rs. 5,000 by cash.
 - vii. Received cash form Ali Raza of Rs. 10,000.
 - viii. Return defective furniture of worth Rs. 1,500.
 - xi. Paid wages Rs. 1,000, Rent 2,000 and Electricity Bill Payable Rs. 1,500.
d) Describe Accounting as an Information System.
2. Enter the following transactions in the Journal and post them into ledger and from the information obtained prepare a Trail Balance.

Nov

- 10th : Mrs. Roy started business with 60,000
- 11th : Bought furniture from Modern Furniture for 10,000
- 12th : Purchased goods for cash 15,000
- 13th : Purchased goods from B. Sen & Co for 30,000
- 14th : Opened a bank account by depositing 16,000
- 16th : Sold goods for cash 15,000
- 17th : Purchased stationery for 1000 from Bharat Stationery Mart
- 18th : Sold goods to Zahir Khan for 10,000
- 19th : Bought machinery for 6,000 and payment made by cheque
- 20th : Goods returned by Zahir Khan for 2,000
- 21st : Payment to B.Sen & Co by cheque 5,000
- 22nd : Withdrew from bank for personal use 3,000
- 23rd : Interest paid through cheque 2,000
- 24th : Withdrew from bank for office expenses 10,000
- 26th : Cheque received from Zahir Khan 5,000
- 27th : Paid electricity bill for 100
- 29th : Cash sales for 6,000
- 30th : Commission received by cheque 5,000

OR

On April 01, 2016 Anees started business with Rs.100,000 and other transactions for the month are:

5th SEMESTER

2. Purchase Furniture for Cash Rs. 7,000.
 8. Purchase Goods for Cash Rs. 2,000 and for Credit Rs. 1,000 from Khalid Retail Store.
 14. Sold Goods to Khan Brothers Rs. 12,000 and Cash Sales Rs. 5,000.
 18. Owner withdrew of worth Rs. 2,000 for personal use.
 22. Paid Khalid Retail Store Rs. 500.
 26. Received Rs. 10,000 from Khan Brothers.
 30. Paid Salaries Expense Rs. 2,000 You are required to pass Journal Entry
3. Record the following transactions in the Journal and post them into ledger and prepare a Trail Balance.

- Oct 1st : Neel started business with a capital of 80,000
3rd : Bought goods from Karl on credit 20,000
4th : Sold goods to Tarl 25,000
5th : Cash purchases 25,000
7th : Cash sales 15,000
9th : Goods returned to Karl 2,000
10th : Bought furniture for 15,000
11th : Cash paid to Karl 12,000
12th : Goods returned by Tarl 3,000
14th : Goods taken by Neel for personal use 3,000
15th : Cash received from Tarl 12,000
16th : Took loan from Parl 30,000
17th : Salary paid 5,000
18th : Bought stationery for 1,000
19th : Amount paid to Parl on loan account 18,000
20th : Interest received 4,000

OR

Write short notes on (Any Two)

- I. Cash Book
 - II. Errors in Trial Balance
 - III. Capital Item
 - IV. Revenue Item
4. a) Differentiate between profit and loss account .
b) Write short notes on : Adjustments in Final Account.

OR

c) What do you mean by Final Account ?

What are the objectives for preparing final account ? Explain each one in brief.

d) Write short notes on : Balance Sheet.

5) Write short notes on (Any Two)

- I. Annual Report of a company
- II. Share Capital
- III. Loan Capital

V - S - BCA- Accounting & Financial Management - (P - DSE - I)



5th SEMESTER

V - S - BCA - Programming in NET - (P - DSE - II)(R & B)
2020

Full Marks - 70

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

(Each Question Carries Equal Marks.)

1. a) What are the application of NET using command line compiler ? [7]
b) Write the features of NET. [7]
OR
c) Define the term Data type . What are the different data types available ?
Explain each one in brief. [7]
d) Write the features of visual studio NET IDE. [7]
2. a) What are the different types of available web controls in NET ? [7]
Explain each one in brief. [7]
b) Write a program to a registration form a student with any five attribute. [7]
OR
c) Write a program to design a login page with id and password. [7]
d) Explain in details about the different kinds of validation controls in NET . [7]
- 3) a) Write short notes on : HTTP Handler. [7]
b) Explain the error handling and debugging mechanisms in NET. [7]
OR
b) What are the different security features of ASPNET ?
Explain each one in brief. [7]
c) Write short notes on : Configuration of ASP NET [7]
4. Write short notes on any TWO. [7*2=15]
a) SOAP
b) Deploying and Publishing Web Service.
c) Web Service Infrastructure.
5. a) Discuss different types of Data Relation. [7]
b)What do you mean by OleDb ? Write down its Data Adapter type. [7]
OR
a) Write a simple NET to display database connectivity. [7]
b) Write a program to design a Calculator. [7]

V - S - BCA - Programming in NET - (P - DSE - II)(R & B)

5th SEMESTER

**+3-VS-CBCS-Sc(H) - C. Sc. (DSE – 1) R & B
2021**

Time : As in Programme

Full Marks : 50

**The figures in the right-hand margin indicate marks.
Answer all questions from both the Groups.**

Group – A

1. Answer all the questions : 1×10 = 10
- (a) Differentiate between public key crypto-graphy and private key cryptography.
 - (b) Differentiate between Modification and Fabrication.
 - (c) Calculate the row and column number if the 6 bit input is 110011 in S-Box substitution.
 - (d) Calculate the message digest of the integer 14365711.
- EG – 129/2 (Turn over)
- (e) Define the term “Non-Repudiation”.
 - (f) What do you mean by Worm ?
 - (g) Differentiate between Substitution and Transposition.
 - (h) What do you mean by Trap doors ?
 - (i) What do you mean by Salami Attacks ?
 - (j) What is Double DES ?

Group – B

2. What are the different types of security principles used in a network system ? State each one. 8
OR
State the details of one round of DES.
3. State RSA algorithm. If N = 187 and the encryption key (E) is 17, then find out the corresponding private key (D). 8
OR
Explain the concept of Digital Signature.
4. Write short notes on Malicious Code. 8
OR
EG – 129/2 (2) Contd.
Define the terms VIRUS ? Explain the life cycle of VIRUS.
5. Write short notes on any two of the following : 8
- (a) Database Security
 - (b) File Protection
 - (c) Multilevel Security
6. What are the different types of Firewall ?
State the functionalities of each one. 8
OR
What are the different types of Threats ? State each one in brief.

EG – 129/2 (1,000) (3) +3-VS-CBCS-Sc(H) — C. Sc. (DSE – 1) R & B



5th SEMESTER

+3-VS-CBCS-Sc(H) — C. Sc. (DSE – 2) R & B
2021

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.
Answer all questions from both the Groups.

Group – A

1. Answer the following questions : 1×10 = 10

- Write the RISC properties of ARM.
- State some examples of 32-bit versions of ARM.
- Define the Von-neumann architecture.
- What is a Addressing Mode ?
- Give examples of Data transfer instructions in ARM.
- State the types of Byte addressability in ARM.
- What is Pipelining ?
- Write the syntax for load and store instruction in ARM.
- State some characteristics of Thumb instruction set.
- Differentiate between RISC and CISC

Group – B

2. (a) Discuss the Register Organisation of ARM. 8

OR

(b) Discuss the architectural inheritance of ARM processor. 8

3. (a) With proper syntax, give examples of Data transfer instructions in ARM. 4

(b) Discuss the 3-stage pipeline organisation of ARM. 4

OR

(c) State the different logical and Arithmetic instruction used in ARM. 5

(d) Discuss the use of SWI instruction. 3

EG – 130/5 Contd.

4. (a) Write of the syntax for conditional execution of Branch (BL) instructions in ARM. 5

(b) Write the Syntax for performing data transfer from status register to general purpose register and viceversa. 3

OR

(c) State the ARM coprocessor instruction set for register transfers. 5

(d) Write a program in ARM to load a double word from a memory location to a CPU register. 3

5. (a) State the various data-types supported in ARM Programming Model. 8

OR

(b) Write a ARM program to find the largest among 3 nos. The 3 nos. are stored in 3 general purpose registers. Store the highest no in memory. 8

EG – 130/5 (Turn over)

6. (a) What is Thumb ? Differentiate between Thumb and ARM instruction set. Give examples of Thumb data processing instructions. 8

OR

(b) Discuss the following : 8

(I) AMBA (ii) ARMulator (iii) CPSR

EG – 130/5 (1,000) (4) +3-VS-CBCS-Sc(H) — C. Sc. (DSE – 2) R & B



5th SEMESTER

+3-VS-CBCS-Sc(H) —
C.Sc (Core – 11)
R & B

2021

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

Answer from both the Groups as directed.

Group – A

1. Answer all questions : 1×10 = 10
- (a) What is an Array List ?
 - (b) State the names of four special methods that implements set theoretic operations.
 - (c) What is JDBC ? State the names of JDBC drivers you know.
 - (d) Write the Syntax of Prepared Statement.

EG – 127/2

(Turn over)

5th SEMESTER

- (e) What will be the value of x, if the following assignment done in java script ?
var x = 12 + 5 + "University".
- (f) Write any two java script events.
- (g) Write the significance of >>> operator in java script.
- (h) What is Scriptlet in JSP ?
- (i) State the essence of <jsp:useBean>tag.
- (j) Write the meaning of MVC in JSP application development.

Group – B

2. Distinguish between iterators and array indexes. Write a program to demonstrate the working of iterator with a Set object. 8

OR

What is Java Collection Framework (JCF) ? Explain the 3 fundamental types of class available in JCF. State any 8 methods of Collection interface that resides in java.util package.

EG – 127/2

(2)

Contd.

5th SEMESTER

3. Design a simple calculator by embending a java script function to the HTML page, which will receive two integer value through two different **textbox** and on the event of click on **Submit button**, their summation will be displayed over the screen. 8

OR

Explain different types of loops availbale in java script. Distinguish between For/In and For/Of Loop. Write a java script function to illustrate the same.

4. Distinguish between createStatement () and prepareStatement () method in JDBC connection. Write a chunk of code to illustrate the distiction between them. 8

OR

Write a java program to create a table using JDBC connection, having following columns :

Name	Roll	Dept	Mobile	E-Mail

Then insert the data into the table using **Prepared Statement Class**.

EG – 127/2

(3)

(Turn over)

5. Why Implicit JSP Objects are called pre-defined variables ? State and Explain any four Implicit Object that JSP supports. 8

OR

Distinguish between GET and POST method of form processing. Write a JSP page (main.jsp) to receive first and last name of a person and pass through GET method in HTML <form> tag.

6. What is Introspection ? How it is essential in building a user defined Java Bean. Explain `getBeanInfo()` method of Introspector class. 8

OR

What is Java Bean ? What are the advantages of Java Bean ? Explain the steps for creating an user defined Bean with some chunks of codes for Bean (source file).



EG – 127/2 (1,000) (4) +3-VS-CBCS-Sc(H) —
C.Sc (Core – 11)
R & B



5th SEMESTER

+3-VS-CBCS-Sc(H) — C.Sc. (Core – 12) R & B
2021

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.
Answer from both the Groups as directed.

Group – A

1. Answer the following questions : 1×10 = 10
- (a) What is a S/W process ?
 - (b) Define S/W engineering ethics.
 - (c) Give examples of S/W process models.
 - (d) Define system modelling.
 - (e) Differentiate between functional and non-functional requirements.
 - (f) State the steps in Requirements Engineering Process.
 - (g) What is Static Testing ?
 - (h) State the dependability properties of a critical S/W.
 - (i) What do you mean by S/W evolution ?
 - (j) State the various diagrams used in UML design.

Group – B

2. (a) Discuss the steps in Rational Unified Process. 5
(b) State the methods used for Scaling Agile. 3
OR
(c) State various ethics for S/W Engineering. 4
(d) Explain the methods implemented in Extreme programming. 4
3. (a) Describe the steps used in Requirements Engineering Process. 8
OR
(b) Draw a Use-case and sequential diagram for Issue-Book of Library Management System. 8
4. (a) State the hierarchy of S/W testing. 3
(b) Cite out the laws followed for program evolution. 5
OR
(c) State the symbols used drawing a class diagram. What types of relationships are represented through class diagram. 8
5. (a) Discuss the following : 4
(i) Formal Specification
(ii) System Engineering
(b) Explain the steps followed for Reliability Specification. 4
OR
(c) Explain the following : 8
(i) System Procurement
(ii) Complex Systems
(iii) S/W Dependability
(iv) S/W Failure
6. (a) State and explain the various Architectural pattern used for Dependable systems. 8
OR
(b) Define Redundancy and diversity in Dependable Engineering. Discuss the dependable processes used in dependable engineering. 8

6th SEMESTER

VI – S – BSc.- (ITM) – Core – XV – (Prog.in NET/ASPNET)

2019

Full Marks -50

Time – As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. (a) Explain the elements of the NET Frameworks? [5]
(b) What is garbage collection ? How it is works in Asp.net. [5]
OR
(c) NET is not a programming Language. Justify and explain. [5]
(d) Discuss various components o visual studio net IDE. [5]
- 2.(a)Describe how to create an Asp.Net application with example? [5]
(b) What is webforms? Explain the web controls with example. [5]
(c) Design a user Registration form having fields Name,Email,Sex, Qualification, Adress with appropriate controls in Asp.Net. [5]
(d) Discuss different types of web controls used in ASP. NET. [5]
- 3.(a) Explain different application of Asp.Net. [5]
(b) Explain authentication and authorization in Asp. Net. [5]
OR
(c) Explain the different sections in web. Config file. [5]
(d) What is Caching ? Explain are the different types of Caching.
- 4.(a) What SOAP? Explain different elements of SOAP.
(b) Explain the techniques used to consume a web service. [5]
OR
(c) What is web service ? Explain how to build a web service.
(d) Write short notes on:
(i) Deploying web service
(ii) Data Adapter Type
- 5.(a) Explain various characteristics of ADO. NET. [5]
(b) What is debugging in ASP.NET ? Explain how to debug an application. [5]
OR
(c) Explain the working of ADO.NET. [5]
(d) Write a sample code to connect oledb database and insert into the book table having fields book name, publication name, edition, no. of pages and price of the book.



SEMESTER - VI

6th SEMESTER

V - S - BCA - Programming in NET - (P - DSE - II)(R & B)
2020

Full Marks - 70

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

(Each Question Carries Equal Marks.)

1. a) What are the application of NET using command line compiler ? [7]
b) Write the features of NET. [7]
OR
- c) Define the term Data type . What are the different data types available ?
Explain each one in brief. [7]
- d) Write the features of visual studio NET IDE. [7]
2. a) What are the different types of available web controls in NET ? Explain each one in brief.[7]
- b) Write a program to a registration form a student with any five attribute. [7]
OR
- c) Write a program to design a login page with id and password. [7]
- d) Explain in details about the different kinds of validation controls in NET . [7]
- 3) a) Write short notes on : HTTP Handler. [7]
- b) Explain the error handling and debugging mechanisms in NET. [7]
- b) What are the different security features of ASPNET ? Explain each one in brief. [7]
- c) Write short notes on : Configuration of ASP NET [7]
4. Write short notes on any TWO. [7*2=15]
- a) SOAP
- b) Deploying and Publishing Web Service.
- c) Web Service Infrastructure.
5. a) Discuss different types of Data Relation. [7]
- b) What do you mean by OleDb ? Write down its Data Adapter type. [7]
OR
- a) Write a simple NET to display database connectivity. [7]
- b) Write a program to design a Calculator. [7]



6th SEMESTER

VI- S- BCA- 6.3--(E- COMMERCE)
2020

FULL MARK- 70

TIME - AS IN THE PROGRAMME

The figures in the right hand margin indicate marks.

Answer any TWO questions

(Each question carries equal marks)

1. (a) What are the advantages and dis-advantages of e-commerce ? Explain each one brief.
(b) Based on evolution of e-commerce and changing consumer behavior in the market, Where do you see the trend moving for innovation in the industry ?
OR
(c) Give a comparison among C2C, C2B, and B2G ?
(d) Define the term e-commerce. What are the different applications of e-commerce? Explain each one brief.
2. (a) What are some tactics that our company can deploy to boost repeat purchase rates and increases customer relation ?
(b) What are the real time network requirements for E-Commerce? Explain brief.
OR
(c) Explain the various techniques used in EDI(Electronic Data Interchange).
(d) Define the term image compression. What are the different types of image compression Techniques are used in image processing? Explain each one in brief.
3. (a) Explain the working principle of DES algorithm.
(b) What is the Role of RSA in E-Commerce ?
OR
(c) What are the different types of security principle implemented in E-Commerce? Explain each one brief.
(d) Explain the role of networking in e-commerce.
4. (a) Why do corporate house implement more than one firewall for security ?
(b) Define VPN and its Types and advantages of VPN ?
OR
(c) Write Short notes on : Cyber Theft .
(d) Explain Digital Signature and also explain how does it Works?
5. Write Short Notes On Any Four :
(I) Credit Card
(II) Debit Card
(III) E-Wallet
(IV) Smart card
(V) Net Banking
(VI) Testing in E-Commerce



6th SEMESTER

2020

FULL Marks -80

Time- As in the programme

The figures in the right-hand margin indicate marks.

Answer any two questions.

BSC(ITM)6th

SEMESTER SUB-E-commerce

PAPER:DSE-III

1. Answer all. [2x5]
- (a) what are the functions of E-commerce ?
- (b) Define ISP .
- (c) How web promotion can be done in E-commerce.
- (d) Define credit card system.
- (e) What do you mean by paperless bill ?
2. a. Explain main activities and goal of E-commerce. Discuss various components of E-commerce. [14]
- OR
- Briefly explain the e-commerce model with example. [14]
3. a. Describes the different types of network used for e-commerce [7]
- b. Discuss the role of Internet in B2B application. [7]
- OR
- (c) Write short notes on : (Answer any Two) [14]
- (a) Domain Name (b) WWW (c) Shopping Bots
4. Define cryptography. Write the differentiate between Public and Private cryptography. [14]
- OR
- Write short notes on: (Answer any Two) [14]
- (a) Hacking (b) Authorization and Authentication (c) Digital Signature
5. Define EDI. Explain the concepts of EDI with advantages and disadvantages. [14]
- OR
- Explain types of Electronic Payments System used for online transactions. [14]
6. Explain the strategies for developing electronic commerce websites with example. [14]
- OR
- Briefly explain the types of planning required for e-commerce. What are the linking objectives required for business strategies ? [14]

