LAKSHYA INSTITUTE OF TECHNOLOGY

BSC.DS

2nd SEM UNIVERSITY

OLD QUESTION

2025

Full Marks - 100

Time - As in the Programme

The figures in the right hand margin indicate marks.

Answer all the questions.

Part – I

1.   Answer all the question :   [1 x 10

a.   Which of the following is a nonlinear data structure ?

   i)   Array   ii)   Linked List

   iii)   Stack   iv)   Tree

b.   Which of these is used for implementing recursion ?

   i)   Stack   ii)   Queue

   iii)   Linked List   iv)   Tree

c.   The number of leaf nodes in a binary tree with n nodes :

   i)   n   ii)   n + 1

   iii)   2n   iv)   n - 1

[Cont....

[2]

d. In which data structure is each element connected to multiple elements, forming a network ?

    i) Stack   ii) Tree

    iii) Graph   iv) Queue

e. Binary Search can be applied only on :

    i) Unsorted array   ii) Sorted array

    iii) Linked List   iv) Graph

f. The maximum number of children that is possible for a node is known as the _____ of a node.

g. A _____ list is a type of linked list where the last node points back to the first node.

h. Depth First Search (DFS) uses _____ data structure.

i. A _____ is a linear data structure that follows the First In First Out (FIFO) principle.

j. In a max heap, the _____ element is always at the root.

[3]

Part – II

2. Answer the following questions in about 50 words each :   [2 x 9

(a) What is the difference between a queue and a stack in terms of data handling ?

(b) What are measures used for the efficiency of the algorithm ?

(c) Differentiate between row major order and column major order with example.

(d) What is a dequeue ?

(e) What is the difference between a directed and an undirected graph ?

(f) Define pivot node in context of AVL search tree.

(g) Differentiate between full binary tree and complete binary tree.

(h) State the application of graph in real life problem solving.

(i) Convert the following expression in postfix notation.

$(P+Q) * ((X+Y)/Z)$

Part – III

3. Answer any EIGHT questions in about 250 words each : [5 x 8

(a) A linked list stores student records. Write an algorithm to delete a node containing a given student ID.

(b) Explain tower of Hanoi puzzle with three rods.

(c) Define height balanced tree. Discuss the different types of rotations applied to balance an unbalanced tree.

(d) How a linked list is used for representing polynomial. Explain with the following example.

$3x^6 - 8x^2 + 7x - 12$

(e) Write an algorithm to perform binary search on a list of key values.

(f) How can you represent a sparse matrix efficiently using arrays ?

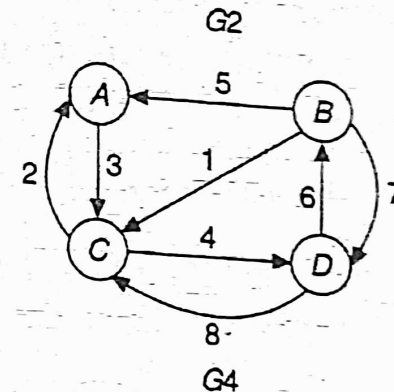(g) Construct a binary search tree (BST) using the following values : [50, 30, 70, 20, 40, 60, 80]

[Cont...

(h) Write recursive algorithms for inorder, preorder, and postorder traversal of a binary tree.

(i) Evaluate the following postfix expression using a stack.

A B C * D / + where A = 4, B = 2, C = 3, D = 6

(j) Discuss different ways of representing a graph in respect to the following example.

Part – IV

Answer any FOUR of the following questions in about 800 words each : [8 x 4

4. a. Write an algorithm to implement bubble sort on a list of key values. [4

[Cont...

b. Sort the following sequence of numbers using bubble sort in ascending order and also show step by step process. [4

56, 21, 92, 10, 34

5. a. Write an algorithm to insert a node at the end of a single linked list. [6

b. State the advantages of linked lists over using array. [2

6. a. Write an algorithm to perform PUSH,POP operations on a stack. [6

b. Discuss the application of queue. [2

7. a. Write an algorithm to insert a node at any position in a double linked list. [6

b. Explain the advantage of circular linked list over linear linked list. [2

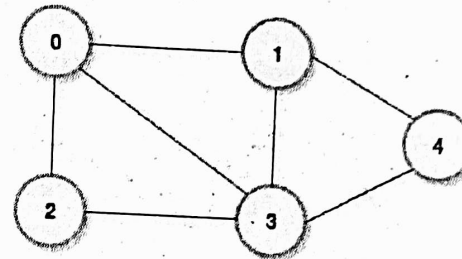8. a. Construct a binary tree from its given preorder and inorder traversal. [4

Preorder : 1, 2, 4, 5, 7, 3, 6, 8

Inorder : 4, 2.7, 5, 1, 8, 6, 3

[Cont...

b. Discuss step by step traversal of the following graph using breadth first search technique. [4

II - S - BCA - Core - 1 - Major - 3 - (Data Structure)-
(Regular) - (2024 AB, NEP - 2020)

6. Discuss all tree traversal algorithms in detail.

OR

(a) Construct an expression tree for the following expression.

$(A + B) - (((C * D) + F) / G)$

(b) Construct a binary tree from its given preorder and inorder traversal.

Preorder : A B D E H C F I J G

Inorder : D B H E A I F J C G

7. Write an algorithm to implement binary search on a list of key values.

OR

Sort the following sequence of numbers using insertion sort in ascending order and also show step by step process.

44, 55, 33, 88, 77, 22, 11, 66

II - S - BCA - CC - 4 - (Data Structures) - (R & B)

2024

Full Marks - 60

Time - As in the Programme

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

Group – A

1. Answer all questions : [8 x 1

(a) What is double linked list ?

(b) What is traversal of a linked list ?

(c) Queue is termed as FIFO. Justify the statement.

(d) Define recursion.

(e) What is internal sort ?

(f) How many types of searching techniques are used in data structure ?

(g) Define degree of a node in a tree.

(h) Define binary tree.

Group – B

2. Answer any 8 questions : [8 x 1.5

(a) Explain ADT with example.

(b) What are measures used for the efficiency of the algorithm ?

[Cont...

(c) What is column major order ?

(d) Convert the following expression in postfix notation.

$(A+B) * ((C+D)/E)$

(e) Define Priority queue.

(f) Specify all the notations used to represent an arithmetic expression with an example.

(g) State the condition to verify that the queue is empty.

(h) Arrange the following data in lexicographic order.

JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG

(i) When R-R rotation is applied.

(j) Differentiate between full binary tree and complete binary tree.

Group – C

3. Answer any 8 of the following : [8 x 2

(a) Discuss advantages of circular linked list over linear linked list.

(b) Represent the following polynomial using a linked list.

$5x^6 + 12x^2 - 3x + 25$

(c) What are applications of stack ?

(d) Evaluate the following postfix expression using a stack.

A B C * D / + where $A = 4, B = 2, C = 3, D = 6$

(e) What is Deque ?

(f) What is Divide and Conquer Strategy ? Name the sorting methods based on this technique.

(g) Construct a binary search tree using the following key values.

52, 85, 34, 19, 41, 90

(h) State two properties of a height balanced tree.

(i) Construct a max heap using the following data values.

45, 22, 68, 23, 11, 51

(j) Define siblings with an example.

Group – D

Answer all questions : [4 x 6

4. Explain the various types of data structure used in programming.

OR

Write an algorithm to insert a node at specific location in a single linked list.

5. What do you mean by stack ? Write an algorithm for various operations that can be performed over a stack using array.

OR

Write an algorithm to delete an element from a queue.

2023

Time :As in Programme

Full Marks : 60

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

PART-I

1. Fill in the blanks or answer with in one word.   1x8

    a.   Give an example of linear data structure.

    b.   Stack follows the _____ mode of operation.

    c.   Deques has _____ numbers of tail or rear.

    d.   Linked List has _____ in the link part of a node.

    e.   Expression tree is an example of _____ tree.

    f.   To allocate the memory dynamically for linked lists, we can use _____ function in c language.

    g.   To check stack overflow, we need to test the condition _____.

    h.   Each binary tree has utmost _____ numbers of child nodes.

PART-II

2. Answer any eight within two to three sentences.   1.5x8

    a.   What is ADT ?

    b.   State the LIFO and FIFO mode of operation.

(Turn Over)

c. What is Garbage collection ?

d. Is it essential to sort an array before applying the binary search ?

e. What condition to be checked for stack underflow ?

f. What is recursion ?

g. How does the Priority queue work ?

h. What is polish notation ?

i. Give an example of preorder and post order traversal of an expression tree.

j. What is a complete binary tree ?

PART-III

3. Answer any eight of the following (in maximum 75 words.)   2x8

a. What is Time complexity ?

b. Explain various asymptotic notations.

c. How do m-way search trees work ?

d. Why is AVL tree also known as a height balanced tree ?

e. What is a Heap Tree ? How does it work ?

f. Briefly explain, how does radix sort works ?

g. Among the Insertion, Selection and Bubble sort, which is the most efficient and why ?

h. State the sorting algorithm that follows the divide and conquer approach.

i. Briefly explain the insertion operation in an AVL tree.

j. How does a circular queue work ?

PART-IV

Answer within 500 words each.   6x4

4. a.   What is Sparse Matrix ? Illustrate one application of sparse matrix with a c program.

OR

   b.   Suppose two sorted linked list are given to you, then write a c program to combine these two linked lists and the resultant linked list must be in a sorted order.

5. a.   Write a program in c language that gives you the solution to the Tower of Hanoi problem for n disks. Test the program using n=4.

OR

   b.   Write a program in c that implements a queue using a linked list and supports the INSERT and DELETE operation. Test the program using any five integers.

6. a.   Write a program in c that implements a stack using arrays and supports the PUSH and POP operations. Test the program using any five integers.

OR

   b.   Write a program in c that receives 10 integers and sort the elements in ascending order using quick sort.

7. a.   Draw a binary tree for the expression : $ax^2 + bx + c$, then write a c program to print the nodes of that binary tree in preorder and postorder.

OR

   b.   Write a c program to check whether the above binary tree i.e Q. 7(a) is a BST or not.

─────── ❁ ───────

(3)

(4)

+3-II-S-CBCS(MS)-Sc(H)-Core-IV-Comp.Sc-R&B

2024

Time :As in Programme

Full Marks : 60

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*Answer **all** questions.*

PART-I

1. Fill in the blanks.   1x8

   a. In general, the index of the first element in an array is ____.

   b. Minimum number of fields in each node of a doubly linked list is ____.

   c. In a stack, if a user tries to remove an element from an empty stack it is called ____.

   d. A queue follows ____ principle.

   e. The number of edges from the root node to the deepest leaf is called ____ of the tree.

   f. In a max-heap, element with the greatest key is always in the ____ node.

   g. ____ sorting algorithm is the fastest for sorting small arrays ?

   h. Binary search makes use of ____ strategy to search an element.

                                              (Turn Over)

C.SC-212(4)

PART-II

2. Answer any eight within two to three sentences   1.5x8

   a. Assuming int is of 2 bytes, what is the size of int arr[12]; ?

   b. What is a sparse matrix ?

   c. How do you test for an empty queue ?

   d. What is the value of the postfix expression 6 3 2 4 + − * ?

   e. List some applications of queue data structure.

   f. Which data structure suits the most in the tree construction ?

   g. What are the applications of binary tree ?

   h. What is a balance factor in AVL trees ?

   i. Mention the types of searching.

   j. What is meant by linear search ?

PART-III

3. Answer any eight of the following (in maximum 75 words.)   2x8

   a. What is the purpose of dynamic memory management ?

   b. What are the advantages of linked list over an array ?

   c. What are the drawbacks of array implementation of queue ?

   d. Differentiate between stack and queue data structure.

   e. How can AVL tree be useful in all the operations as compared to binary search tree ?

   f. Give the preorder and postorder traversal of the expression tree (a+(b*(c-e))/f).

   g. Differentiate between merge sort and quick sort ?

(2)   (Contd.)

h.   Is the heap sort always better than the quick sort ? Explain.

PART-IV

Answer within 500 words each.   6x4

4.   Write an algorithm to insert a node at the beginning, middle and end of singly list.

OR

Explain different types of dynamic memory management functions with appropriate examples.

5.   Explain how an infix expression can be converted to a post-fix expression with an example.

OR

Explain the addition and deletion operations performed on a queue with necessary algorithms.

6.   Create a binary search tree for the following numbers (start from an empty binary search tree) :

45, 26, 10, 60, 70, 30, 40 Delete keys 10, 60 and 45 one after the other and show the trees at each stage.

OR

Write recursive algorithms for tree traversal (Inorder, Preorder, Postorder).

7.   Explain the working of quick sort on the following data :

10, 15, 0, 17, 20, 25, 30, 16, 70, 6.

OR

Write an algorithm for binary search and discuss its speed compared with linear search.

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(3)

2024

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Answer ALL questions.

Group – A

1. Answer all questions :   [8 x 1

(a) What is double linked list ?

(b) What is traversal of a linked list ?

(c) Queue is termed as FIFO. Justify the statement.

(d) Define recursion.

(e) What is internal sort ?

(f) How many types of searching techniques are used in data structure ?

(g) Define degree of a node in a tree.

(h) Define binary tree.

Group – B

2. Answer any 8 questions :   [8 x 1.5

(a) Explain ADT with example.

(b) What are measures used for the efficiency of the algorithm ?

[Cont...

[2]

(c) What is column major order ?

(d) Convert the following expression in postfix notation.

(A+B) * ((C+D)/E)

(e) Define Priority queue.

(f) Specify all the notations used to represent an arithmetic expression with an example.

(g) State the condition to verify that the queue is empty.

(h) Arrange the following data in lexicographic order.

JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG

(i) When R-R rotation is applied.

(j) Differentiate between full binary tree and complete binary tree.

Group – C

3. Answer any 8 of the following : [8 x 2

(a) Discuss advantages of circular linked list over linear linked list.

(b) Represent the following polynomial using a linked list.

$5x^6 + 12x^2 - 3x + 25$

(c) What are applications of stack ?

(d) Evaluate the following postfix expression using a stack.

A B C * D / + where A = 4, B = 2, C = 3, D = 6

[Cont...

(e) What is Deque ?

(f) What is Divide and Conquer Strategy ? Name the sorting methods based on this technique.

(g) Construct a binary search tree using the following key values.

52, 85, 34, 19, 41, 90

(h) State two properties of a height balanced tree.

(i) Construct a max heap using the following data values.

45, 22, 68, 23, 11, 51

(j) Define siblings with an example.

Group – D

Answer all questions : [4 x 6

4. Explain the various types of data structure used in programming.

OR

Write an algorithm to insert a node at specific location in a single linked list.

5. What do you mean by stack ? Write an algorithm for various operations that can be performed over a stack using array.

OR

Write an algorithm to delete an element from a queue.

[Cont...

6. Discuss all tree traversal algorithms in detail.

OR

(a) Construct an expression tree for the following expression.

$(A + B) - (((C * D) + F) / G)$

(b) Construct a binary tree from its given preorder and inorder traversal.

Preorder : A B D E H C F I J G

Inorder : D B H E A I F J C G

7. Write an algorithm to implement binary search on a list of key values.

OR

Sort the following sequence of numbers using insertion sort in ascending order and also show step by step process.

44, 55, 33, 88, 77, 22, 11, 66

◆

II - S - BCA - CC - 4 - (Data Structures) - (R & B)

2025

Full Marks - 100

Time - As in the Programme

The figure in the right-hand margin indicates marks

Answer all questions

Part - I

1.   Answer the answer of following Questions.

$[1 \times 10 = 10$

(a)   All keywords are defined in which case ?

(b)   do..while is a which type of statement ?

(c)   Which data structure used to convert infix to postfix notation ?

(d)   What is the prefix of A-B/ (C * D ^ E) ?

(e)   Which data structure allows deleting data elements from front and inserting at rear ?

(f)   Which sorting algorithm used divide-and-conquer method ?

(g)   Which type of function calls itself to perform a task ?

(h)   Which data structure used to print the natural number in reverse order ?

[Cont...

(i) "Stack is a non-linear data structure". The statement is true or false.

(j) What is the role of a node in a tree ?

Part - II

2. Answer the following in 50 words each.

[2 × 9=18

(a) Differentiate linear and non-linear data structure.

(b) What is doubly linked list and how the doubly linked list can be represented ?

(c) What are the applications of stack ?

(d) What is the difference between while loop and do...while loop ?

(e) Explain self- referential structure.

(f) Describe in detail about the command line argument.

(g) Define structure and explain how it is different from union.

(h) Explain binary searching technique.

(i) What is binary tree and write down the properties of binary tree ?

Part - III

3. Answer any eight questions of the following in 250words each.   [5 × 8=40

(a) Write a c program to find length of a given string.

(b) What is the difference between a queue and a stack ?

(c) Translate infix expression into its equivalent post fix expression: (A+B^D)/(E- F)+G

(d) Write an algorithm to traverse a linked list.

(e) Explain bubble sort algorithm with example.

[Cont...

(f) Write a program to find out factorial of a number using recursion

(g) Differentiate 1D and 2D array with examples.

(h) Write down the advantages and disadvantages of array over linked list.

(i) Write down the algorithm for push and pop operation.

(j) Draw a heap tree by using max heap property of the given numbers
1000,520,400,450,630,650,300,350

Part - IV

Answer any four of the following Questions in 800 words each.   [8 × 4=32

4. What is operator ? What are different types of operators in c explain all with the examples.

5. What is dynamic memory allocation explain briefly with examples ?

6. Write a C program for implementation of Queue using array.

7. Create a binary search tree for the following numbers start from an empty binary search tree. 45,26,10,60,70,30,40,75,100,120,15,200 and show the trees at each stage.

8. What is quick sort ? Explain its techniques with an example.

✤

<u>I - S - B.Sc. - (ITM) - P - Major - I -</u>
<u>(Data Structure Using C) - (R)</u>

1.   Write the answer of the following questions

a)   How to define the structure of double linked list to store the data?

b)   How a binary tree is called Threaded binary tree?

c)   What is Compaction?

d)   How to calculate degree of a node? Explain it with example.

e)   What is the postfix operaiton of (A*B+C) - (D/E)?

2. Answer any FIVE of the following questions.

i)   Explain different types of data structure with examples.

ii)a)   Write a program to add two different 3-dimensional matrixes.

b)   Define Pointer. Explain its advantages over array?Write an example how a set of elements are manipulated with pointer.

iii) 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.

b)   Write an algorithm to store data in a tree.

iv)   Write insertion, first-insert, last-insert and deletion algorithm of linked list.

v) a)   How arithmetic expressions are evaluated using stack? Explain it with example.

b)   Explain linked representation of stack with an example.

vi)   Define Queue. How it is represented? Explain inserting and deleting algorithm in a queue. Discuss various applications of queue.

vii)   Write down push & pop algorithms and various applications of stack.

viii)   Explain pre-order, in-order and post-order tree traversal with their algorithms and example.

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2022
Full Marks - 60
Time - As in the Programme
The figure in the right hand margin indicate marks
Answer All question.

1. Answer all the questions :

a) What is binary tree?

b) What is the use of queue data structure?

c) What is the maxium number of nodes in a binary tree of height K?

d) Which data structure suits the most in the tree construction?

e) Which data structure is used in BFS algorithm?

f) What is the use of void data type?

g) What is abstract data type?

h) Define the use of POP operation.

2. Answer any EIGHT of the following questions.

a) What is the drawback of array implementation of data structure?

b) List few applications of tree data structure.

c) What is linked list?

d) What are the advantages of dynamic data structure?

e) What is LIFO? Λ

f) Which data structure is used for recursive algorithm?

g) What are the advantages of data structure?

h) What is post fix operation?

3. Answer any Eight of the following questions

a) State the property of B Tree.

b) Write the difference between linear and non-linear data structure?

c) Which data structure is used for pre-fix operation and how?

d) Convert the following infix to post fix operation $(a+b) \Lambda c(c/d) +e$.

e) Write the difference between array and stack.

f) What is the use of dequeue?

g) What is AVL Tree? Explain it with an example.

h) Which sorting algorithm is called fastest and why?

4. Answer any Four of the following questions.

i) Explain different types of data structure with examples.

ii) a) Write a program to add two different 3-dimensional matrixes.

b) Define Pointer. Explain its advantages over array? ;Write an example how a set of elements are manipulated with pointer.

iii)   Write insertion, first-insert, last-insert and deletion algorithm of linked list.

(iv) a)   How arithmetic expressions are evaluated using stack? Explain it with example

b)   Explain linked representation of stack with an example.

(v)   Define queue. How it is represented? Explain insertin and deleting algorithm in a queue. Discuss various applications of queue.

vi)   Write down push & pop algortithms and various applications of stack.

vii)   Explain pre-order, in-order and post-order tree traversal with their algorithms and example.

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2020
Full Marks - 50
Time - As in the Programme
The figure in the right hand margin indicate marks

Answer any TWO questions

1. (a) What is time and space complexity? How it is calculated? Is it necessary to measure the above components in the designing of programs? Justify your answer.

b) Explain the features and application of various linear data structure.

OR

c) Define structure. Discuss the syntax of a structure with example. Create a structure input book No., subject, No. of pages and price for five books and print it.

d) What is DMA? How it is implemened? Is it possible to make memory efficient program using pointer. Suggest your views.

2.a) Write an algorithm to delete a node from the last position of single linked list.

b) What is traversing in a linked list? Write an algorithm to print all the values of a linked list.

OR

c) Write an algorithm to merge two different linked lists.

d) Discuss the structure of double linked list with example.

3.a) Convert the following expression to prefix and postfix form.

a - (b* (c+ d/e-f) + g* h

b) 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

c) Define queue. What are the operations performed in a queue? Write various applications of queue.

d) Define recursion. Discuss various dis-advantaged of recursive function? Write a program to calculate factorial of number using recursion.

4.a) Write algorithms for different order of traversal performed in a binary tree.

b) What is the differfence between tree and binary tree? Define different types of binary trees.

OR

c) Write an algorithm to search a key element in a Binaryh Search Tree.

d) Construct a binary search tree whose preorder traversal is given as follows.

55, 66, 77, 15, 11, 33, 22, 35, 25, 44, 88, 99

5.a) Write an algorithm of binary search operation to search a number from a list.

b) Write a program to sort 10 numbers and print it using quick sort.

OR

c) Explain the concept of storage allocation strategies.

d) Write a program to sort a set of numbers using insertion sort.

2019
Full Marks - 60
Time - As in the Programme
The figure in the right hand margin indicate marks
Answer All question.

Group - A

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

i)   Define the term NonLinear Data Structure.

ii)   Differenciate between double linked list and single linked list.

iii)   Differenciate 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 Programme 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 operationon a slack.

                OR

b)   Define Recursion. Write a program to calculate factorial of a number.

5.a)   Write an algorithm to delete an element at the end of queue.

                OR

b)   Write an algorithm to delete an element from the beginning of a queue.

6.a)   Explain the concept of physical implemention 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.

2019
Full Marks - 50
Time - As in the Programme
The figure in the right hand margin indicate marks
Answer All question.

1. Write the answer of the following questions.

a) How to calculate degree of a node? Explain it with example.

b) What is the postix 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.

a) WRite a program to add two different 3- dimensional matrix.

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.

b) Explainboundary tag system in details.

OR

Write insertion, fist-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 representaiton of stack with an exmple.

OR

Write down push & pop algorithms and various applications of stack.

5.a) Define queue. How it is represented ? Explain inserting and deleting algorithm in a queue.

b) Discuss various applications of queue.

OR

a) Explain how priority queue used inRound Robin Scheduling.

b) Write down the algorithms used for insertion and deletion in deque?

6. Explain pre-order, in-order and post-order tree traversal with their algorithms and example.

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.

b) Write an algorithm to store data in a tree.

***

2018
Full Marks - 70
Time - As in the Programme
The figure in the right hand margin indicate marks
Answer All question.

1. (a)   What are the differences between Static Data Structure and Dynamic Data Structure?

b)   What is array? Explain types of array with example.

OR

a)   What is Abstract Data types? Explain with example.

b)   How to structures are processed? Explain it by Nested structure.

2.a)   What is lists? Explain it by using array.

b)   What is single linked list? Write a algorithm to insert a node at beginning of Single Linked list.

OR

c)   What is Double Linked List? Explain with example.

d)   What are the applications of linked list? How linked Isit is advantageous over Array.

3.a)   What is stack? What are the uses of stack? Implement stack using linked list.

b)   What is Queue? Explain Queue implementation using array.

OR

c)   What is tree? Write the algorithm for traversing a Binary Tree.

d) $(A + B/C) * (D \wedge E) + F$. Convert this infix expression into postfix by using stack.

4.a)   What is Quick sort? Write the algorithm for Quick sort.

b)   What is Merge sort? Sort the following by using merge sort:

| 9 | 12 | 3 | 57 | 98 | 1 | 37 | 40 |

OR

c)   What is Heap sort? Explain the algorithm for Heap sort.

d)   What is Selection sort? Sort the following using Section Sort

| 7 | 3 | 6 | 10 | 24 | 2 | 8 | 23 |

5.a)   What is Searching? Explain the criteria of selecting a search algorithm.

b)   Explain High Probability ordering with example

OR

c)   What is Hashing? What are the Hashing Techniques? Explain.

d)   How collision occurs? Explain the linear probing.

***

2018
Full Marks - 50
Time - As in the Programme
The figure in the right hand margin indicate marks
Answer All question.

1.   Answer all the questions :

a)   Explain ADT with suitable examples.

b)   Evaluate the postfix expression 3, 16, 2, +, *, 12, 6, /, -.

c)   What do you mean buy Expression Tree? Give an example of it.

d)   List out applications of stack.

e)   What are the limitations of arrays in comparisons to the linked lists?

2.a)   What is data structure? Explain the objective of data structure. Discuss types of data structure with examples.

b)   Write the C code to access the elements of 1D array A having capcity 15.

c)   What do you mean by merging of two arrays? Write an algorithm for merging two 1D arrays into single array.

3.a)   What is list? Write an algoprithm for creation a single linked list. Also write algorithm for insertion a new node to that SLL at end and at specific position.

                        OR

b)   What do you mean by Double linked list? What is the advantageous of DLL over SLL.

c)   List out the applications of linked list. Explain the memory representation of linked list.

4.a)   Explain the process of conversion from infix expression to postfix expression using stack.

b)   Convert infox to postfix using stack Z+ (Y*X-(W/V^U)*T)*S.

                        OR

c)   Explain the algorithm for quick sort. Sort the elements using quick sort 56, 24, 20, 17, 2.

5.a)   Write the algorithm for linked list representation of queue.

b)   What is queue? Explain the overflow and underflow conditions of linear queue.

                        OR

c)   What is double ended queue? Explain types of double ended queue with suitable examples.

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.

b)   What is a tree ? Describe the terminololgies used in tree.

                        OR

c)   Construct the AVL tree by using the keys: 50, 40, 35, 58, 48, 42, 60, 30, 33, 25. Delete 40 after constructing the AVL tree.

                        ***

2018
Full Marks - 60
Time - As in the Programme
The figure in the right hand margin indicate marks
Answer All question.

Group-A

1. a)   Explain the physical Implementation of Binary tree.

   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 list.

   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 triangula rmatrix.

                OR

   a)   Write a program to multiply two 3x3 matrices

3. a)   Perform the following operations in a Single Linked List.

   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.

   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.

   b)   Find out positfix form 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.

   b)   Explain Quick sort with example.

5. a)   What is Queue? Write algorithms to add and delete element from a queue usign Link List Representation.

                OR

   a)   Explain any two with example

i)   Dequeu

ii)   Priority Queue

iii)   Application of Queue

6.a)   Explain any two with example

i)   Binary Search Tree

ii)   Weighted Binary Tree

iii)   Decision Tree

<div align="center">OR</div>

a)   Define Linked list representation of a Binary Tree.

b)   Explain Insertion, deletion, Traversal Operation on Binardy Tree.

<div align="center">***</div>

(c) Write a program to create a double linked list and print it.

OR

Convert the following infix expression to postfix using stack.

(A+(B*C-(D/E^F)*G)*H)

(d) Write the function in queue to check the queue is full or empty.

OR

Write short notes (answer any TWO) :

(i) Priority Queue

(ii) Representation of Stack using Array

(iii) Pointer Array

(iv) Circular Linked List

✦

II - S - B.Sc. (Comp.Sc.) - Core - IV - (Data Structure)

2023

Full Marks - 60
Time - As in the Programme
The figures in the right hand margin indicate marks.
Answer ALL questions.

1. Answer all the questions :   [1 x 8 = 8

(a) Define data structure.

(b) Notations invention are for characterising the _____ behaviour of function.

(c) The function is used to append n characters of S2 to S1. Write the syntax _____.

(d) _____ is the memory management function that can be used for allocating memory during program execution.

(e) Write the syntax to create a block of memory.

(f) Write the three segments of nodes in a double linked list.

(g) Which matrix consists of maximum number of zeros ?

(h) Which type of data structure used in Stack ?

[P.T.O.

2. Answer any EIGHT of the following questions :

[1.5 x 8 = 12

(a) What is double circular linked list ?

(b) Write any two applications of stack.

(c) What is asymptotic notation ?

(d) What is the concept of transpose of sparse matrix ?

(e) Write the two conventions of storing the elements in any matrix in memory.

(f) Write any two string function concepts with their syntax.

(g) What is the prefix form for the following expression: A*B-(C+D)-(E-F)+G/H^I.

(h) What is dequeue ?

(i) Write the definition of complete binary tree.

(j) In how many ways we can traverse a binary tree ? Describe it.

3. Answer any EIGHT of the following questions :

[2 x 8 = 16

(a) What is asymptotic notation ? Describe each in brief.

(b) Evaluate the following expression : 2^4+6*2^2-12/4.

[Cont...

(c) Describe different operations of queue.

(d) Explain different terminology used in tree (atleast any four).

(e) How to represent a binary tree into an array ? Explain it with an example.

(f) State the difference between queue and linked list.

(g) What is expression tree ? Explain with example.

(h) Write the rule of binary search tree.

(i) Write any two application of tree.

(j) When a tree is called as strictly binary tree ?

4. Answer any FOUR of the following questions :

[6 x 4 = 24

(a) Construct a tree using pre-order and post-order traversal technique.

Preorder-ABDGHKCEF, postorder-GKHDBEFCA

OR

Insert the following nodes in an AVL tree.

55, 66, 77, 15, 11, 33, 22, 35

(b) Write a program in C to create a matrix.

OR

What is linked list ? Describe different types of linked list.

[Cont...

2023

Full Marks - 60

Time - As in the Programme

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

1.   Answer all the questions :   [1 x 8 = 8

 (a) Define linked list.

 (b) The overflow condition for queue is _____.

 (c) Write the definition of stack with example.

 (d) How many minimum no of nodes that a binary tree can have ?

 (e) If the size of the stack is 10 and we try to add the 11th element in the stack then the condition is said to be _____.

 (f) What is sparse matrix ?

 (g) What is linear data structure ?

 (h) Define complete binary tree.

2.   Answer any EIGHT of the following questions :
                                    [1.5 x 8 = 12

 (a) Define circular queue.

 (b) Explain enqueue() and dequeue().

 (c) Define array.

[P.T.O.

[2]

(d) Write one infix expression and prefix expression.

(e) Which sorting algorithm is fastest ?

(f) Write the formula to calculate the Row major order.

(g) Write the definition of binary search tree.

(h) Do the parenthesis count for : (a+b) - (c*d).

(i) What is the formula to calculate the balance factor of AVL tree ?

(j) Stack and queue follows which structure ?

3. Answer any EIGHT of the following questions :

[2 x 8 = 16

(a) What do you mean by level of the tree ?

(b) What are the categories of AVL tree ?

(c) Draw a complete binary tree and convert it into preorder, postorder and inorder.

(d) Define depth and height of the tree.

(e) Write an algorithm for insertion sort.

(f) Find the top value for the following stack operation : push (5), push (10), pop, push (15), pop, push (20), push (25), pop, pop.

(g) What is non-linear data structure ?

(h) Evaluate the postfix expression : 4 6 2 + * 1 2 3 / -.

(i) What is min heap and max heap ? Write with an example.

(j) Define quick sort and heap sort.

[Cont...

[3]

4. Answer any FOUR of the following questions :

[6 x 4 = 24

(a) Write an algorithm to insert a node after a given node using single linked list.

OR

Write an algorithm to delete the last node using single linked list.

(b) Convert the following infix expression to prefix : (x*(y+z)/a-b*(c+d/e)).

OR

Write different algorithms to perform various operations on stack.

(c) Define AVL tree. Briefly explain all the rotations of AVL tree with example.

OR

Construct a max heap tree using the following : 20, 33, 16, 77, 45, 92, 25, 10, 8, 64.

(d) Solve the following using quick sort by taking 24 as the pivot node : 24, 9, 29, 14, 19, 27.

OR

Write the algorithm for linear and binary search.

◆

<u>II - S - B.Sc. (ITM) - Core - 4 - (Data Structure)</u>

2022

Time :As in Programme

Full Marks : 80

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

GROUP- A

1. Answer any eight of the following questions.   2.5x8=20

    (a)   Why is 'listening' an important part of communication ?

    (b)   What is paralinguistics ?

    (c)   What is the role of context in communication ?

    (d)   What is information loss ? How it affects the process of communication ?

    (e)   Replace the underlined word with a phrasal verb:

          (i)   The game was <u>cancelled</u> because of bad weather.

          (ii) It's been five years since John <u>quit</u> drinking

    (f)   Do as directed :

          (i)   Be sure to _____ a life jacket before getting into the boat. (Use the appropriate phrasal verb in the blank)

          (ii) The police would not _____ to the kidnapper's demands. (Use the appropriate phrasal verb in the blank)

    (g)   There were a lot of children _____ the classroom _____ the teacher. (Use the appropriate prepositions in the blanks)

    (h)   Change the voice:

          (i)   She showed me a nice portrait

          (ii) A thunderstorm often turns milk sour

    (i)   Change the following word into adjective and use it in a sentence:

          (i)   Religion

          (ii) Space

    (j)   Correct the error:

          (i)   My father is thinking that I should stop smoking

          (ii) She is married with a plumber who is five years older than her.

(Turn Over)

GROUP- B

Answer any four of the following questions: 15x4=60

2. Write a note on the process of communication.

OR

What are the different types of communication ? Elaborate with examples.

3. Write a note on the differences between verbal and non-verbal communication.

OR

Show your acquaintance with the different types of communication barriers.

4. Read the following passage carefully and answer the questions that follows:

The expression "an educated person" might be taken to apply to an individual who, being possesed of average intelligence, application and memory, has devoted several years of his or her life to the acquisition of general knowledge. It would not be within such, narrow confines that I should use the expression, since a moment's examination of this definition proves it to be wholly unsatisfactory.

What, for instance, is meant by 'Several years'? Does it mean the years between the ages of five and fourteen, or the years between the ages of five and twenty-one? Assuredly it means nothing of the sort, since a person who ceases to educate himself at any age is not, in my sense of the word, an educated person. Only those can lay claim to that resounding title who continue to learn and learn until they are nailed in their coffins. What, again, is meant by "general knowledge" ? The pedants have assured us that the aim of all higher education is to know something about everything and everything about something. Much as I envy and admire those rare people who are in fact capable of these extremes of erudition, I should regard them, not so much as persons of exceptional education but rather as sports or freaks, akin to lightning calculators, who have been endowed by nature with extraordinary minds. No normal person can possibly know something about everything, and even those who know everything about something become incapable of elastic thought and are contorted into unnatural shapes which recall the masterpieces of the topiarist's art. The normal human being who aspires to be educated should concentrate upon those areas of learning which are attuned to his individual capacities, and should enlarge those areas by becoming acquainted with the wider areas, which surround his own nucleus of knowledge.

(a) What does the expression 'an educated person' mean ?

(b) Why the given definition of 'an educated person' is not satisfactory ?

(c) Who is not an educated person according to the writer ?

(d) What is the aim of our higher education according to the pedants ?

(e) Who are regarded as sports or freaks by the writer ?

(f) What a normal human being, who aspires to be educated, should do ?

5. Write a formal email to your professor requesting him to recommend your name for the job of research assistant at the university.

OR

As a manager of a shopping mall write an email to your product supplier to speed up the supply.

6. Expand the following idea into paragraph

"All good things must come to an end"

OR

"Time and tide waits for none" .

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2025

Full Marks - 80

Time - As in the Programme

The figures in the right hand margin indicate marks.

Answer ALL questions.

Group – A

1. Answer all question : [10 x 2 = 20

(a) Discuss the elements of communication ?

(b) What are barriers to effective communication ?

(c) What are the tactics of listening skill ?

(d) What are the disadvantages of non-verbal communication ?

(e) Differentiate synonyms and antonyms with example.

(f) What is the role of grammar in communication ?

(g) What is the difference between oral and written presentation ?

(h) How interviewer is different from interviewee ?

(i) Describe about CV.

(j) Describe about formal letter.

[Cont...

Group – B

Explain any FOUR of the following :

2.(a) Define communication. Explain the process with neat labeling of elements.   [7.5

(b) What are the key principles of effective communication ? Discuss how they help in achieving clarity and understanding.   [7.5

OR

(c) Write the Different communications, today we are using.   [15

3.(a) Define Listening. What are different types of listening ? Explain the process of listening and why it is considered as important of all the skill in communication ?   [15

OR

(b) Write the methods and techniques of skimming and scanning.   [15

4.(a) ONE word substitution :   [5

The study of planets = _____.

One who is unable to pay off one's debts = _____.

A person who eats human flesh = _____.

[Cont...

A person who is not easily pleased = _____.

That which can't be corrected = _____.

(b) Write the Opposite words :   [5

Agree, Bold, Construction, Changeable, Best.

(c) Define Sentence. Write types of sentences with examples.   [5

OR

(d) Write an essay "Water- The Elixer Life."   [15

5.(a) Write the guidelines of official correspondence for making Esquires, complaints and replies.   [15

OR

(b) Write a Formal letter for your job.   [7.5

(c) What is Interview ? Write the process of interview.   [7.5

II - S - BCA - AEC - 2 - (English Communication) - (Back) - (2021, 2022 & 2023 AB)

II - S - BCA - AEC - 2 - (English) - (Regular) - (2024 AB, NEP - 2020)

II - S - BCA - AEC - 2 - (English) - (Regular) - (2024 AB, NEP - 2020)

2025

Full Marks - 100

Time - As in the Programme

The figures in the right hand margin indicate marks.

Answer ALL questions.

Part – I

1. Answer all the question in ONE word or ONE sentence each :   [1 x 10

(a) What is communication ?

(b) What is the primary purpose of communication ?

   (i) To inform   (ii) To persuade

   (iii) To entertain   (iv) All of the above

(c) Define Encoding in Communication.

(d) State about Active Listening.

(e) IPA stands for ?

(f) What is the primary purpose of reading text ?

(g) Which of the following is a key element of effective writing ?

    (i) Clarity   (ii) Coherence

    (iii) Both i and ii   (iv) Neither i nor ii

(h) _____ communication involves conveying meaning without using words.

(i) Define Stative Verb.

(j) Give one example of Exclamatory Sentence.

Part – II

2. Answer all the questions in about 50 words each.

                                         [2 x 9

(a) Define feedback in communication.

(b) What is Horizontal communication ?

(c) State the purpose of Skimming and Scanning in Reading.

(d) How can you improve your speaking skill ?

(e) Write the IPA symbol of the word "Sat".

(f) How many syllables are there in the word "Institution".

(g) When do we use "Will" and "Would".

(h) Mention the difference between Present simple and Present continuous.

(i) Make Sentences of the following Words "State" and "Report".

Part – III

3. Answer any EIGHT of the following in about 250 words each :   [5 x 8

(a) What are the elements of Communication Process ?

(b) Describe about Formal, Semi-formal and Informal Styles of Communication in English.

(c) Explain some common barriers to effective listening.

(d) Mention the importance of Non-verbal communication in public speaking.

(e) What are the different types of Reading Skills ?

(f) Describe the importance of Vocabulary in Reading Comprehension.

(g) State the difference between Active voice and Passive Voice.

(h) How do you use Clauses in sentence structure ?

(i) Differentiate between hearing and listening.

(j) Write the short notes on Simple Sentence and Compound Sentence.

[4]

(e) Deepak / Diya Mishra of L/105, Nayapalli, Bhubaneswar bought a HP Desk Jet 200 Printer from The Computer Centre, the sole dealer of Hewlett Packard at Master canteen, for use with his/her newly acquired personal computer, a month ago. Now he/ she finds that the print quality is poor and the ink nozzles of the print cartridge get frequently clogged. The printer has been given one year warranty against any technical fault. Write a letter as Deepak/ Diya Mishra to the dealer complaining about the same and requesting him to attend to it.

(f) Recently your college has celebrated Independence Day in the college campus. Draft a report in about 120 words on the celebration of Independence Day to be published in a local Odia Daily.

(g) Discuss Reading Skill and its different methods.

(h) Write a detailed account of English in the Print and Electronic media in India.

✦

2023

Full Marks - 80
Time - As in the Programme
The figures in the right hand margin indicate marks. Answer ALL questions.

1. Answer all the questions :   [1 x 12 = 12

(a) They have invited him to the party. (Change the voice.)

(b) Better late than _____. (Complete the proverb with an appropriate word.)

(c) The students (eat) _____ their lunch without a complaint.

(d) Everyone who crosses the border _____ show his / her passport. (must/ should/ can)

(e) Peter _____ (teach) English at the University.

(f) All the _____ is not gold. (glitter / glitters)

(g) He does not believe _____ God. (Write a preposition.)

(h) Mother said, "I am not well today". (Change the Narration.)

(i) It _____ (rain) for two hours and the ground is too wet.

[P.T.O.

(j) After unpacking all boxes, the family of Mr. Gupta _____ (set off/ set up/ set on) their house.

(k) Write the synonym of 'Clarify'.

(l) Write the antonym of 'Arrival'.

2. Answer any EIGHT of the following questions :

[2 x 8 = 16

(i) Define Communication.

(ii) What is Horizontal Communication ?

(iii) Explain Grapevine Communication ?

(iv) Write accusatory tone in communication.

(v) Write two examples of nonverbal communication ?

(vi) Define Skimming in reading skill.

(vii) What is the use of Officialese ?

(viii) Write two examples of pseudo-cleft sentence.

(ix) Write two examples by using the connector/ word 'as well as' and 'not only__but also'.

(x) Define who is a 'Sender' in communication process ?

3. Answer any EIGHT of the following questions :

[3 x 8 = 24

(a) Define Medium of Communication ?

(b) Differentiate between Skimming and Scanning.

[Cont...

(c) What is Active Listening Skill ?

(d) What is Communicative-English in your opinion ?

(e) What is Inter-Cultural communication ?

(f) Define Sympathetic tone with two examples.

(g) Write a short note on Indianization with examples.

(h) Define Jargon with examples.

(i) Define Cohesive Writing.

(j) Write two distinct features of electronic media in India.

4. Answer any FOUR of the following questions :

[7 x 4 = 28

(a) Define Communication. Write elements and process of communication.

(b) When does Communication Fail ? Define Barriers of Communication.

(c) Enlist important aspects of a Resume with a sample ?

(d) You have seen an advertisement of job recruitment in an IT sector. You want to apply for the same job. Write a letter to the Manager of that company to apply for the job by attaching all the essential documents with it.

[Cont...

[4]

(b) Recently your college has celebrated Republic Day in the college campus. Draft a report in about 120 words on the celebration of Independence Day to be published in a local Odia Daily.

(c) Discuss Reading Skill and its different methods.

(d) Write a detailed account of English in the Print and Electronic media in India.

(e) Define Communication. Write elements and process of communication.

(f) When does Communication fail ? Define Barriers of Communication.

(g) Enlist important aspects of a Resume with a sample ?

(h) You have seen an advertisement of job recruitment in a corporate sector. You want to apply for the same job. Write a letter to the Manager of that company to apply for the job by attaching all the essential documents with it.

✦

II - S - B.Sc. - (ITM) - P - AEC - 2 -
(English Communication) - (Back)

II - S - B.Sc. - (ITM) - P - AEC - 2 -
(English Communication) - (Back)

2025

Full Marks - 80

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. Answer all the questions : [1 x 12 = 12

(a) Peter _____ (teach) English at the University.

(b) All the _____ is not gold. (glitter / glitters)

(c) He does not believe _____ God. (write a preposition)

(d) They have invited him to the party. (change the voice)

(e) Better late than _____. (complete the proverb with an appropriate word)

(f) The students (eat) _____ their lunch without a complaint.

(g) Everyone who crosses the border _____ show his/her passport. (must/ should/ can)

(h) Write the synonym of 'Clarify'.

(i) Write the antonym of 'Arrival'.

(j) Mother said, "I am not well today" (change the Narration)

[2]

(k) It _____ (rain) for two hours and the ground is too wet.

(l) After unpacking all boxes, the family of Mr. Gupta _____. (set off/ set up/ set on) their house.

2. Answer any EIGHT of the following questions :

[2 x 8 = 16

(i) What is the use of Officialese ?

(ii) Write two examples of pseudo-cleft sentence.

(iii) Write two examples by using the connector/word 'as well as' and 'not only but also'.

(iv) What is Horizontal Communication ?

(v) Explain Grapevine communication ?

(vi) Write accusatory tone in communication.

(vii) Write two examples of nonverbal communication ?

(viii) Define Skimming in reading skill.

(ix) Define who is a 'Sender' in communication process ?

(x) Define communication.

3. Answer any EIGHT of the following questions.

[3 x 8 = 24

(a) Define Jargon with examples.

(b) Define Cohesive Writing.

[Cont...

[3]

(c) What is Communicative-English in your opinion ?

(d) What is Inter-Cultural communication ?

(e) Define Sympathetic tone with two examples.

(f) Write a short note on Indianization with examples.

(g) Define Medium of Communication ?

(h) Differentiate between Skimming and Scanning.

(i) What is Active Listening skill ?

(j) Write two distinct features of electronic media in India.

4. Answer any FOUR of the following questions :

[7 x 4 = 28

(a) Soumya / Sampark Miahe of Nayapalli, Bhubaneswar bought a HP Desk Jet 200 Printer from The Computer Centre, the sole dealer of Hewlett Packard at Master canteen, for use with his/ her newly acquired personal computer, a month ago. Now he/ she finds that the print quality is poor and the ink nozzles of the print cartridge get frequently clogged. The printer has been given one year warranty against any technical fault. Write a letter as Deepak/ Diya Mishra to the dealer complaining about the same and requesting him to attend to it.

[Cont...

2024

Full Marks - 80

Time - As in the Programme

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

Group – A

1.   Fill in the blanks :   [2 x 8 = 16

(a) Communication is a part of _____ skills.

(b) The response to a sender's message is called

     _____.

(c) _____ is the method is used to receive
     information from the sender through a letter.

(d) Our dress code is an example of _____
     communication.

(e) The information which is transferred to the receiver
     has to be interpreted the process is called

     _____.

[*Cont...*

(f) The message may be misinterpreted because of

_____.

(g) _____ means looking quickly over a text book to get a general superficial idea of the content.

(h) _____ is the person who notices and decodes and attaches some meaning to a message.

2. Write short notes on any FOUR :   [4 x 4 = 16

(a) Skimming

(b) Semantic Barrier

(c) Feedback

(d) Group Discussion

(e) Importance of Reading

3. Communication should be audience oriented. Why ?   [12

OR

What is 'Barrier' in communication ? Discuss the different types of it and how to overcome.

4. Define Note Making. Explain the different types of Note making process.   [12

OR

Write a letter to the Municipal Commissioner to take necessary actions regarding unsanitary conditions in the streets.

5. Differentiate between Interviewer and interviewee. Write the process of interview. [12

OR

Elaborately discuss the process of communication.

6. What is Close Reading ? Elaborately state the different types of reading. [12

OR

Write a paragraph on Digital India.

✦

II - S - BCA - AEC - 2 -

(English Communication) - (R & B)

(2)

3. Communication should be audience oriented, why ?   [12

OR

What is 'barrier' in communication, discuss the different types of it and how to overcome ?

4. TCS India Ltd. Invites applications for the post of software developer. Write a Resume along with a cover letter for the said post as per the advertisement published in the times of India on 25th March.   [12

OR

Write a letter to the editor of the Indian Express highlighting the cause of not to use phone while driving ?

5. Discuss the importance and relevance of communication in Modern times ?   [12

OR

Elaborately discuss the process of communication ?

6. Précis writing:-   [12
(Any passage of 150 words)

OR

Write a paragraph on your Mobile

✸

2023

Full Marks - 80

Time - As in the Programme

The figures in the right-hand margin indicate marks.

Answer ALL questions.

1. Write whether the following sentences are True or False :-   [2 x 8 = 16

(a) Communication is a two-way process.

(b) Feedback has no role in communication.

(c) 'Context' refers to the total setting in which communication takes place.

(d) Nonverbal signals received by the receiver during the process of communication are more reliable than the verbal message.

(e) Decoding is done by the sender.

(f) Fast reading is more beneficial than Slow reading.

(g) Communication works on the principles of barriers and filters.

(h) One should put on formal dress for the purpose of attending an interview.

2. Write short notes on any four:-   [4 x 4 = 16

(a) Active listening

(b) Encoding

(c) Skimming

(d) Cross cultural communication

(e) Feedback   P.T.O.

3. Communication should be audience oriented, why ? [12

OR

What is 'barrier' in communication, discuss the different types of it and how to overcome ?

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OR

Elaborately discuss the process of communication ?

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(Any passage of 150 words)

OR

Write a paragraph on your Mobile

✦

II - S - BCA - AECC - II - Eng. Comm .

II - S - BCA - AECC - II - Eng. Comm .

2023

Full Marks - 80

Time - As in the Programme

The figures in the right-hand margin indicate marks.

Answer ALL questions.

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 (a) Communication is a two-way process.
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 (e) Decoding is done by the sender.
 (f) Fast reading is more beneficial than Slow reading.
 (g) Communication works on the principles of barriers and filters.
 (h) One should put on formal dress for the purpose of attending an interview.
2. Write short notes on any four:- [4 x 4 = 16
 (a) Active listening
 (b) Encoding
 (c) Skimming
 (d) Cross cultural communication
 (e) Feedback   P.T.O.

[4]

(e) Deepak / Diya Mishra of L/105, Nayapalli, Bhubaneswar bought a HP Desk Jet 200 Printer from The Computer Centre, the sole dealer of Hewlett Packard at Master canteen, for use with his/her newly acquired personal computer, a month ago. Now he/ she finds that the print quality is poor and the ink nozzles of the print cartridge get frequently clogged. The printer has been given one year warranty against any technical fault. Write a letter as Deepak/ Diya Mishra to the dealer complaining about the same and requesting him to attend to it.

(f) Recently your college has celebrated Independence Day in the college campus. Draft a report in about 120 words on the celebration of Independence Day to be published in a local Odia Daily.

(g) Discuss Reading Skill and its different methods.

(h) Write a detailed account of English in the Print and Electronic media in India.

✦

2023

Full Marks - 80
Time - As in the Programme
The figures in the right hand margin indicate marks.
Answer ALL questions.

1. Answer all the questions :   [1 x 12 = 12

 (a) They have invited him to the party. (Change the voice.)

 (b) Better late than _____. (Complete the proverb with an appropriate word.)

 (c) The students (eat) _____ their lunch without a complaint.

 (d) Everyone who crosses the border _____ show his / her passport. (must/ should/ can)

 (e) Peter _____ (teach) English at the University.

 (f) All the _____ is not gold. (glitter / glitters)

 (g) He does not believe _____ God. (Write a preposition.)

 (h) Mother said, "I am not well today". (Change the Narration.)

 (i) It _____ (rain) for two hours and the ground is too wet.

[P.T.O.

(j) After unpacking all boxes, the family of Mr. Gupta _____ (set off/ set up/ set on) their house.

(k) Write the synonym of 'Clarify'.

(l) Write the antonym of 'Arrival'.

2. Answer any EIGHT of the following questions :

[2 x 8 = 16

(i) Define Communication.

(ii) What is Horizontal Communication ?

(iii) Explain Grapevine Communication ?

(iv) Write accusatory tone in communication.

(v) Write two examples of nonverbal communication ?

(vi) Define Skimming in reading skill.

(vii) What is the use of Officialese ?

(viii) Write two examples of pseudo-cleft sentence.

(ix) Write two examples by using the connector/ word 'as well as' and 'not only__but also'.

(x) Define who is a 'Sender' in communication process ?

3. Answer any EIGHT of the following questions :

[3 x 8 = 24

(a) Define Medium of Communication ?

(b) Differentiate between Skimming and Scanning.

[Cont...

(c) What is Active Listening Skill ?

(d) What is Communicative-English in your opinion ?

(e) What is Inter-Cultural communication ?

(f) Define Sympathetic tone with two examples.

(g) Write a short note on Indianization with examples.

(h) Define Jargon with examples.

(i) Define Cohesive Writing.

(j) Write two distinct features of electronic media in India.

4. Answer any FOUR of the following questions :

[7 x 4 = 28

(a) Define Communication. Write elements and process of communication.

(b) When does Communication Fail ? Define Barriers of Communication.

(c) Enlist important aspects of a Resume with a sample ?

(d) You have seen an advertisement of job recruitment in an IT sector. You want to apply for the same job. Write a letter to the Manager of that company to apply for the job by attaching all the essential documents with it.

[Cont...

2025

FULL MARKS-80
TIME- As in the Programme
The figures in the right-hand margin indicates marks
Answer ALL Questions

1. **Answer all questions.**   **[1 X 12 = 12]**

   a. Did Connie stop near her friends as she was feeling dreadful and uneasy ?

   b. What skills did Private Quelch possess?

   c. Was Private Quelch desperate to see recognition ?

   d. What was the theme of Sudhir Babu's poems for the last two months?

   e. What was Sudhir Babu's profession?

   f. How did Corbett try to convince the woman that her grievance was unjust ?

   g. Where was the prayers conducted in George V High School ?

   h. Up to which class did the writer study in George V High School ?

   i. Who would drive the bus in the absence of the driver ?

   j. Why was Tana annoyed with his grandfather's poetry ?

   k. Where was Connie's house located ?

   l. What is non - violence ?

2. **Answer any NINE of the following questions.**   **[2 X 9 = 18]**

   a. What is the ultimate definition of any religion?

   b. Why is distribution of wealth essential ?

   c. What are the different uses of water ?

   d. What is Democracy ?

   e. What is education ?

   f. What makes a sad poem a student's favourite ?

   g. How does forest cover add to the preservation of water ?

   h. What are the uses of having emotion or feeling as an entry point into teaching literature ?

   i. How can common sense be counted as education ?

   j. What do the different religious sects have in common ?

3. **Answer any FIVE of the following questions.**   **[10 X 5 = 50]**

   A. i. Read the given passage and answer the following questions,:

   As all participants must possess a thorough understanding of the topic on which they are supposed to speak, subject knowledge is the first requirement of effective participation in a group discussion. Participants need to have a fair amount of knowledge on a wide range of subjects. They should know all about national and international affairs, burning social and economic topics, scientific and environmental issues, key news makers, controversial topics, and a lot more.

Although a GD test is not designed to assess the ability of the candidate's general awareness of the environment around him or to test his knowledge of current events , he or she is expected to be aware of such matters of everyday observation or experience as may be expected of an educated person. People with depth and range of knowledge are always sought after in dynamic companies and organisations.

The topics for GD test may include interesting and relevant ideas pertaining to society, culture, polity, economy, scientific and technical research ;social, economic, political or environmental problems, controversial issues or case studies. The best way to keep one abreast of latest events and national as well as International developments is to read daily newspapers, good magazines and periodicals, watch news bulletins and informative programs on television. Moreover ,we should use the internet to improve our knowledge about recent developments in different areas. The World Wide Web is a vast database of current authentic materials that presents information in multimedia form and reacts instantly to a user's input.

   a. What are the usual topics for GD tests ?
   b. How can one keep oneself informed about the latest events ?
   c. What do you mean by the World Wide Web?
   d. Which type or category of people are sought after in companies and organizations ?
   e. What should the participants in GD need to know ?

 ii. Write the opposite of the following words :

a. Punish.   b. Organise.   c. Encourage.   d. Careful.   e. Accept

B. i. Use the proper form of the word given in brackets:
   a. Is it —---- to drive a car when you are 16 ?(law)
   b. The Times of India is perhaps the most famous —----paper in India .(day)
   c. What sort of fish is this ? It's —(taste) good.
   d. The new pop group was so successful in India that their—--- spread to the USA(famous)
   e. Corbett tried to convince the woman that her —-----(grieve)was unjust.

ii. What arrangements were made by Corbett for his night long vigil in the village?

C. i. How does Connie manage to escape from getting killed by the burglar ?Do you think it was a dramatic escape ?

ii. Fill in the blank with a correct auxiliary verb:
     a) Ravi and Sunita —-----just colleagues (is/ am /are)
     b) Either John or Sunita—-----to be blamed.(are/am/is)

c) Many students—--- not submitted the project reports(has/ have /am)

d) The committee—------ not able to take a decision.(is/am/are)

e) He and I —----going to join the Navy (is /am/are)

D. i. Change the voice:

a) I made a mistake.

b) Lata sings a song.

c) He has deposited the sum.

d)They are building a new house.

e) We were practicing yoga.

ii. How do you think the youth have the capacity to change a Nation's future ?

E. i. Why was Veersen consigned concerned to a lonely position on the front verandah ? why did Sudhir Babu's family bar him from riding the bicycle ?

ii. Change the following into Indirect speech:

a) I said, "I am speaking the truth".

b) We said," They cannot cross the river".

c) Rajesh says," she has brought a fair name to her family".

d) He said," We will win the match".

e) Mohan said , "The teacher may ask us questions".

F. i. What does Private Quelch attribute his awesome knowledge to ?What was his expression or statement ?

ii. Fill in the blanks with the correct prepositions:

a) The dog jumped—---- the wall into my neighbour's garden.

b) Simran is—----- his room.

c) I waited—----- the bus stop for twenty minutes.

d) I will put this picture—------ the wall.

e) The path leads—---- the Woods .

★

II-S-B.Sc.-DS-(H)-AEC-2-(ENG.COMM.)

2022

Full Marks - 80

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

Group – A

1. Answer ALL questions :   [10 x 2 = 20

 (a) Discuss the elements of communication ?

 (b) What are barriers to effective communication ?

 (c) What are the tactics of listening skill ?

 (d) What are the disadvantages of non-verbal communication ?

 (e) Differentiate synonyms and antonyms with example.

 (f) What is the role of grammar in communication ?

 (g) What is the difference between oral and written presentation ?

 (h) How interviewer is different from interview ?

[P.T.O...

[2]

(i) Describe about CV.

(j) Describe about formal letter.

Group – B

Explain any FOUR of the following :

2.(a) Define Communication. Explain the process of communication with its elements. [7.5

(b) How communication is considered as effective communication ? Discuss the basic principles of effective communication. [7.5

OR

(c) Write the different communications, today we are using. [15

3.(a) Define Listening. What are different types of listening ? Explain the process of listening and why it is considered as important of all the skill in communication ? [15

OR

(b) Write the methods and techniques of skimming and scanning. [15

4.(a) One word substitution : [5

The study of planets = _____.

[Cont...

[3]

One who is unable to pay off one's debts = _____.

A person who eats human flesh = _____.

A person who is not easily pleased = _____.

That which can't be corrected = _____.

(b) Write the opposite words : [5

Agree, Bold, Construction, Changeable, Best.

(c) Define Sentence. Write types of sentences with examples. [5

OR

(d) Write an essay "Water - The Elixer Life". [15

5.(a) Write the guidelines of official correspondence for making Esquires, complaints and replies. [15

OR

(b) Write a Formal letter for your job. [7.5

(c) What is interview ? Write the process of interview. [7.5

◆

II - S - BCA - AEC - 2 - (English COM.) - (NC)

2022

Full Mark – 60

Time – As in Programme

The figures in the right hand margin indicate marks.

Answer all questions

(Each Questions carry equal marks)

1. Briefly explain the nature, importance & functions of Management.

   OR

   Elaborate the contribution & approaches to the management thought.

2. What are the elements of organizing? Describe to the types of organizations.

   OR

   Write briefly about the need & importance of planning. Add a note on the need & techniques on forecasting.

3. What is Communication? Explain types & importance of Communication.

   OR

   Briefly explain the theories & importance of motivation.

4. Describe the classes and levels of decisions.

   OR

   Define strategy and elaborate the role of different strategist.

5. Write shot notes:
   i.   Quality and functions of leaders
   ii. Techniques of counselling

   OR

   Explain the strategic management in India. Describe the relevance of strategic management & its benefit.

[4]

6. Explain the term Motivation. Explain any two motivational theories.

OR

What do you understand by "Leadership Style"? Describe the different styles of leadership.

7. Conceptually, strategy of a firm consists of two inseparable parts: business strategy and corporate strategy. Distinguish between them.

OR

The strategic management process encompasses three phases-strategy formulation, implementation, and evaluation and control. — Discuss.

❖

I - S - BCA - GE / IC - I -
(Principles of Management) - (R & B)

2023

Full Marks - 60

Time - As in the Programme

The figures in the right hand margin indicate marks.

Answer ALL questions.

Group – A

1. Answer all question : [8 x 1

(a) _____ function of management is considered as base for all other functions.

(b) The _____ theorized by Frederick Winslow Taylor.

(c) Planning is the most challenging activity for the management as _____.

(d) _____ is a key element in effective organization.

(e) Staffing is the _____ stage of management process.

(f) The process by which activities are started, directed, and continued so that physical or psychological needs or wants are met is known as _____.

[Cont...

(g) Controlling function finds out how far _____ deviates from standards.

(h) Strategic plans establish _____ objectives and an overall strategy by which a firm fulfils its mission.

Group – B

2. Answer any EIGHT questions :   [8 x 1.5

(a) Define Management.

(b) Mention the role of Managers (any two).

(c) What are the various functions of Management ?

(d) What is Scalar Chain ?

(e) State two advantages of planning ?

(f) What is meant by Esprit de corps ?

(g) What do you mean by Free rain leadership ?

(h) What is Decentralization ?

(i) What is Feedback Control ?

(j) Differentiate between forecast and budget.

Group – C

3. Answer any EIGHT questions :   [8 x 2

(a) Is Managing, a science or an art ?

(b) Define Corporate Planning.

(c) List any four quantitative forecasting techniques.

(d) What is Line Authority ?

(e) What is meant by Delegation of Authority ?

(f) List out the basic needs in a hierarchy.

(g) Who is Leader ?

(h) What are the types of control ?

(i) What is the importance of coordination ?

(j) What are the various levels of decisions ?

Group – D

Answer all :   [4 x 6

4. Explain the various functions of management.

OR

Describe about the evolution of management thought.

5. What are different types of plans ? Explain.

OR

Define Decision - Making and explain the process of decision – making that affects the efficiency of the business decisions.

2021

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicates marks.

Answer ALL questions.

1. Answer any FOUR of the following questions : [2Î4=8

   (a) Define MBO.

   (b) What is the importance of motivation ?

   (c) Differentiate between formal and informal organisation.

   (d) What is Staffing ?

2. Answer any FOUR of the following questions : [3Î4=12

   (a) State the Maslow's Hierarchy of needs.

   (b) "Management as Art, Science & Profession", justify.

   (c) What are the various types of planning ?

   (d) Leadership is situational. Explain.

3. Answer any FOUR of the following questions : [4Î4=16

   (a) What are the advantages and limitation of planning ?

   (b) Discuss the function of management.

   (c) Suggest your views on what are the quality and function you want to see within a good leader ?

   (d) Define coordination. Discuss its importance to the organization.

4. Answer any THREE of the following questions : [8Î3=24

   (a) What do you mean by forecasting ? How is it related to planning ?

   (b) Decision making is the primary task of the management. Discuss this statement and explain the process of decision making.

   (c) Elucidate the contribution of F. W. Taylor to Management.

[Cont...

(d) What is the importance of controlling ? Discuss various tools and techniques applied by the manager for effective controlling.

(e) Discuss the relevance of strategic management and its benefit to any organization.

(f) Define delegation of authority. What is the need of such ? What are the difficulties in delegation ? Suggest your solution to such difficulties.

❈

III - S - B.Sc. - (ITM) - C - 7 - (PM)

(14)

2023

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1.   Answer the following questions :   [1 x 8 = 8

 (a)   What is Administration ?

 (b)   Define the concept of operative management.

 (c)   What do you mean by planning ?

 (d)   Write the need of organisational structure.

 (e)   Write the reasons of delegation.

 (f)   What is the need of management ?

 (g)   Define leadership.

 (h)   What do you mean by decentralization ?

2.   Answer any EIGHT of the following questions :
                                        [1.5 x 8 = 12

 (a)   Write down the overview of management.

 (b)   What do you mean by motivation ?

 (c)   Write different approaches in management.

 (d)   What is social responsibility ?

 (e)   Write the differences between Management vs. administration.

[P.T.O...

(f) Write down different types of communication.

(g) What is classical theory ?

(h) How delegation and authority are related ?

(i) Define span of management.

(j) Define decision making in forecasting.

3. Answer any EIGHT of the following questions (within 50 words) :   [2 x 8 = 16

(a) What are the classes of decision ?

(b) Write down two advantages of planning.

(c) What are the types of organization ?

(d) Write different skills required by a good manager.

(e) Discuss the modern approach to management.

(f) Explain Fayol's contribution to management.

(g) What are the barriers of communication ?

(h) Explain the merits of decision making.

(i) Define the concept of centralization and decentralization in management.

(j) What do you mean by staffing and controlling ?

4. Answer any FOUR of the following questions :   [6 x 4 = 24

(a) Point out the distinctive contribution of Taylor to the theory of management. Why is he regarded as the father of scientific management ?

OR

Explain briefly the contribution of Peter Drucker to management thought.

[Cont...

(b) Write down the advantages and limitation of planning. Discuss how planning is helpful to a manager in decision making ?

OR

Discuss the various leadership styles in management process.

(c) What is Controlling ? Write down the importance and process of controlling.

OR

What is Communication ? Discuss various types of communication in management.

(d) Define strategy and discuss its benefits in decision making.

OR

Give an analytical note on different types of decisions taken in an organization.

✦

III - S - B.Sc. - (ITM) - Core - 7 -

(Principle of Management)

2025

FULL MARKS-25
TIME- As in the Programme
The figures in the right-hand margin indicates marks
Answer ALL Questions

1. **Answer any FIVE of the following questions.**   **[1 X 5 = 5]**
   a. What is management?

   b. The process of setting goals and developing strategies to achieve them is called_____

   c. Which leadership style a manager empowers team for decision making?

   d. The process of monitoring performance and taking corrective action is known as_____

   e. Which communication with employees leads to effective management?

   f. How operational efficiency achieved?

   g. What is planning?

   h. Explain types of motivation in short.

2. **Answer any FIVE of the following questions.**   **[2 X 5 = 10]**
   a. What do you mean by strategic?

   b. What are the benefits of management by objective?

   c. What is the purpose of co-ordination in management?

   d. What is behavioral school theory of management?

   e. Explain the chain of command ?

   f. What are the functions of management ?

   g. What do you know about a spirit of clause?

   h. What are the advantages of planning premises ?

3. **Answer any TWO of the following questions.**   **[5 X 2 = 10]**
   a. Discuss various types of communication in management. Is it necessary? If yes, explain.

   b. Briefly explain how effective leadership styles contributed in the implementation of effective management?

   c. Define the strategic planning. What are the states involved in strategic planning?

   d. Explain briefly recruitment and source of manpower supply.

★

(b) Describe the concept of organizational change and organizational development.

OR

Briefly explain how effective leadership styles contributed in the implementation of effective management ?

(c) What is dominant reductive style ? Discuss different types of dominant reductive style. Describe a situation where it was a total failure ? What lesson did you learn from the experience ?

OR

Define the strategic planning. What are the states involved in strategic planning ?

(d) Explain briefly recruitment and source of manpower supply.

OR

Give an analytical note on different types of decisions taken in an organization.

✸

III - S - B.Sc. - (ITM) - Core - 7 -
(Principle of Management) - (R & B)

III - S - B.Sc. - (ITM) - Core - 7 -
(Principle of Management) - (R & B)

2024

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. Answer the following questions :   [1 x 8 = 8

   (a) What is management ?

   (b) Which document is outlining mission, vision and values of an organization ?

   (c) The process of setting goals and developing strategies to achieve them is called _____.

   (d) Which level of management is responsible for day-to-day operation of an organization ?

   (e) Which leadership style a manager empowers a team for decision making ?

   (f) The process of monitoring performance and taking corrective action is known as _____.

(g) Which communication with employees leads to effective management ?

(h) How operational efficiency achieved ?

(i) What is planning ?

2. Answer any EIGHT of the following questions :

[1.5 x 8 = 12

(a) What are the benefits of management by objective ?

(b) What do you mean by strategic ?

(c) Define the performance appraisals ?

(d) What do you know about barriers in planning ?

(e) What is the purpose of co-ordination in management ?

(f) What is behavioral school theory of management ?

(g) What do you know about a spirit of clause ?

(h) What do you understand by the management science theory ?

(i) What are the functions of management ?

(j) Explain the chain of command ?

[Cont...

3. Answer any EIGHT of the following questions (within 50 words : [2 x 8 = 16

(a) List any four quantitative forecasting techniques.

(b) What do you mean by delegation of authority ?

(c) Explain types of motivation.

(d) What are the barriers involved in effective communication ?

(e) What are the essential of effective control system ?

(f) Explain the nature of principle of management.

(g) What do you mean by optimum utilization of resource and effective administration ?

(h) How the scalar chain as a principle of management ?

(i) How does effectiveness default from efficiency ?

(j) What are the advantages of planning premises ?

4. Answer any FOUR of the following questions :

[6 x 4 = 24

(a) Discuss the contribution made by Henry Fayol and F. W. Taylor to the field of management ?

OR

Discuss various types of communication in management. Is it necessary ? If yes, explain.

[Cont...

I - S - BCA - CBCS - GE/IC - I

(Principle of Management)

2021

Full Marks - 60

Time - As in the Programme

Answer ALL questions

(Each question carries equal marks)

1. Define management. What is the relevance of principles of management? Describe the 14 principles of management..

    OR

    What are the different management level sand management functions ? Explain different roles played by a manager in an organization.

2. What are the different types of plans ? Describe the process of planning with a suitable example.

    OR

    Differentiate between Planning and Forecasting.

3. What is Control ? Explain essential steps in Control Process.

OR

What is motivation? Explain and correlate Maslow's Need Hierarchy with Alderfer's ERG theory.

4.   What do you mean by organizational structure? Explain the four building blocks of organizational structure.

OR

Writeshortnotes :

i)   Communicationprocess

ii)   Feed forward, concurrent & feedbackcontrol

5.   Writeshort notes:

i)   Techniques offorecasting

ii)   Techniques of decisionmaking

OR

Differentiate between leadership and management. What are the different leadership styles ? Explain managerial grid with a suitable diagram.

✦

I - S - BCA - CBCS - GE/IC - I
(Principle of Management)

2022

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicates marks.

Answer ALL questions.

1. Answer any EIGHT of the following Questions : [1×8=8

   (a) Define Management.

   (b) How to differentiate between Management and administration ?

   (c) Why supervisor's job is difficulit ?

   (d) What is social responsibility ?

   (e) Why business organisation feel concerned with social responsibility ?

   (f) What are the major elements of planning process ?

   (g) The theory X & theory Y of motivation propounded by _____.

   (h) Directing is a _____ process:

[Cont...

(i) Unit of command is one of the merits of _____ organisation.

(j) Number of sub-ordinate that a Manager/ Supervisor can effectively & efficiently manage/ supervise is knowing as _____.

2. Answer any EIGHT of the following Questions. [1.5×8=12

(i) What is contingency approach of Management ?

(ii) What is planning premises ?

(iii) Define forecasting.

(iv) What do you mean by Departmentation ?

(v) State any two features of staffing.

(vi) Define the merits of directing.

(vii) Define co-ordination.

(viii) Write any two features of leadership.

(ix) What is strategic management ?

(x) What is the need of level of management ?

3. Answer any EIGHT of the following Questions (Within 50 words). [2×8=16

(a) Write short note of corporate planning.

(b) Define the three principles of management.

(c) State the merit of the organization structure.

(d) State the limitation of staffing.

(e) Write a note on "Spam of management".

(f) What are the benefits of strategic management ?

(g) "Co-ordination is the essence of management", discuss ?

(h) Is management a science or art ?

(i) Explain various types of managerial skill.

(j) Distinguish between proactive planning & reactive planning.

4. Answer any FOUR of the following Questions.

[6×4=24

(a) Discuss the major characteristics of management as profession. To what extent has Indian Management been professional used ?

OR

What is directing ? Outline the importance principle of directing.

(b) What is the concept of planning as an element of management process ? Discuss the role in business organisation.

OR

Discuss the concept of strategy. How does it differ from tactics ? Discuss the different levels at which strategies operate.

(c) Define motivation. Explain Maslow's need hierarchy theory of motivation.

OR

Define briefly the 14th principles of management.

(d) Discuss various functions, style and quality of a leader.

OR

Define delegation of authority ? Explain pros and cons of delegation.

___III - S - B.Sc. (ITM) - C - 7 - (P.M) - (R)___

2025

Full Marks - 100

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. Answer all the questions : [1 x 10 = 10

    (a) What is Management ?

    (b) Explain the various levels of management.

    (c) What is meant by social audit ?

    (d) Point out the importance of planning.

    (e) _____ is extended version of classical theory.

    (f) Management is about balancing effectiveness and
         _____.

    (g) What is "Unity of Command" ?

    (h) Define Social Responsibility.

    (i) What is Management Thoughts ?

    (j) Define Staffing.

[Cont...

[2]

2. Answer the following questions : [2 x 9 = 18

(a) List the contribution of F. W. Tailor.

(b) What is Motivation ? Why is it needed in the organisation ?

(c) Write the importance of coordination.

(d) What do you mean by span of control ?

(e) Define two importance of staffing.

(f) What do you mean by MBO ? Do you feel is it needed, if yes then why ?

(g) Define the term of Organisation.

(h) What do you mean by leadership traits ?

(i) Write the need of departmentation.

3. Answer any EIGHT of the following questions :

[5 x 8 = 40

(a) Explain the importance of performance appraisals.

(b) Write any four principles of goods management.

(c) Differentiate between centralization and decentralization of authority.

(d) Discuss various functions of management.

(e) Explain briefly about leadership style.

(f) What do you know about decision making ? Explain its features.

(g) Differentiate between lines and staff organization structure.

[Cont...

[3]

(h) Write the theory of motivation.

(i) Briefly discuss the need of forecasting.

(j) Discuss briefly on contingency approach.

4. Answer any FOUR of the following questions :

[8 x 4 = 32

(a) Briefly discuss about delegation of authority ? Write the common barriers to effective delegation.

(b) Discuss various characteristics of effective management in decision making.

(c) Discuss different levels, task and skills related to management.

(d) Briefly explain the steps used in the selection process.

(e) Discuss the key characteristics of Line and Staff Organizations.

(f) Discuss need, importance, types and limitations of planning.

(g) Explain the Herzberg's two factors theory of motivation and discuss the managerial implication.

✦

II - S - B.Sc. - (ITM) - P - Major - I - P3 -

(Principles of Management) - (Regular) - (NEP-2020)

2025

FULL MARKS-60
TIME- As in the Programme
The figures in the right-hand margin indicates marks
Answer ALL Questions

1. **Answer all questions.**   **[1 X 8 = 8]**
   a. Which function is used to combine values into a vector in R?.
      i. combine()
      ii. vector()
      iii. c()
      iv. list()
   b. Which of the following is used to assign a value in R?
      i. <-
      ii. =
      iii. ->
      iv. All of the above
   c. In R using the function, _____ one can check the data type of vector.
      i. Typeof()
      ii. Castof()
      iii. Function()
      iv. C()
   d. What is the output of below mentioned code?
   Logic1=c(t,f,f,t,f,t)
   print(which (logic))
      i. 1 4 6
      ii. 2 3 6
      iii. 6 4 1
      iv. 1 2 3
   e. What will class(TRUE) return?
      i. logical
      ii. numeric
      iii. integer
      iv. character
   f. Choose correct option(s)
      i. Setwd() is used set the path for saving r code.
      ii. Setwd() is used to set the path for accessing the file.
      iii. Both a and b
      iv. None of the above
   g. _____ operator is used to create integer sequences.
      i. -
      ii. :
      iii. ;
      iv. ~
   h. How to read a CSV file in R?
      i. read.csv()
      ii. read.table()
      iii. import.csv()
      iv. csv.read()

2. **Answer any EIGHT of the following questions.**   **[1.5 X 8 = 12]**
   a. Write about control statements in R?

   b. Explain the importance of data frame?

   c. Discuss the different naming conventions and rules for variable naming, each with example in R.

   d. Explain different matrix operation function in R?

   e. Write about Boolean operators in R?

   f. Explain different matrix operation function in R?

   g. Explain complex object in R?

   h. Explain about set operations in R?

   i. Difference between print() & cat()

   j. Write about type conversion in R?

3. **Answer any EIGHT of the following questions.**   **[2 X 8 = 16]**
   a. Write a program find max between three numbers.
   b. What is apply() Function with example?
   c. Explain working of switch case in R with an example program?
   d. Differentiate between matrices and data frames?
   e. Compare the functions next and break with example program.
   f. What is rep() Function with example?
   g. Write a program to plot a line.
   h. Distinguish the use of ANOVA (Analysis of Variance) in comparing means across multiple groups..
   i. Write a program that demonstrates the use of various arithmetic and Boolean operators.
   j. Write R program to read data from file?

4. **Answer any FOUR of the following questions.**   **[6 X 4 = 24]**
   a. Explain different data structures in R.
                   OR
   Explain different types of Operators in R.

   b. Explain different types loop support by R with example.
                   OR
   Write a R program to create a data frame to store the following details of 5 employees.

Name	Gender	Age	Designation
Sneha patel	F	53	Clerk
Kaya Iyer	F	42	Manager
Rohan das	M	65	Executive
Arjun mehta	M	55	CEO
James erma	M	45	Assistant

c. A student scored 70 marks in English, 95 Marks in Science, 80 Marks in Maths and 74 Marks in History. Write an R program to plot a simple bar chart displaying the scores of the given subjects.

OR

Write a R program to plot a pie plot with suitable example.

d. Write a program that prints a multiplication table from 1 to 10.

OR

Write a program to check a number is Prime or not.

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II-S-B.Sc.-DS-(H)-CC-III-(P.R)

2025

FULL MARKS-60
TIME- As in the Programme
The figures in the right-hand margin indicates marks
Answer ALL Questions

1. **Answer all questions.** [1 X 8 = 8]

   a) Define a random variable.

   b) What is meant by a probability distribution?

   c) Find the expected value of a single die thrown?

   d) Find the mean of a random variable of a Poisson distribution if the Probability of success is 0.03 and the number of trials is 200.

   e) Write the PMF of a Binomial probability distribution.

   f) Find the value of gamma function at X=7.

   g) Find the Mean of a Beta distribution with $\alpha = 2$ and $\beta = 3$.

   h) Find P(X≥ 5) if P(X < 5) =0.4 ?

2. **Answer any EIGHT of the following questions.** [1.5 X 8 = 12]

   a) What are two parameters of a Beta distribution? What do they influence?

   b) Two random variables X & Y are independent .Given that P(XY) =0.48 .Find the probability P(X) if P(Y) = 3*P(X) .

   c) Write any two characteristics of a normal distribution curve.

   d) What is the probability of getting 3 heads in tossing a coin for 4 times?

   e) Define moment generating function of a continuous random variable X.

   f) Find Mean & Variance of geometric probability distribution if p=1/5 .

   g) What is the pdf of a normal probability distribution ?

   h) Define gamma distribution with its parameters.

   i) State Baye's theorem of probability.

   j) Find the value of $(,)$.

3. **Answer any EIGHT of the following questions.** [2 X 8 = 16]

   a) Describe about moments of bivariate probability distributions.

   b) What is hyper geometric probability distribution? Write its PMF.

   c) Prove that E(XY)=E(X) E(Y) if x & Y are two independent random Variables.

   d) Value of the random variable X= 4, Mean is 4 and standard deviation is 3, then find the probability density function of the Gaussian distribution.

   e) Prove posterior probability theorem in brief .

   f) What is cumulant generating function? Write its additive property .

   g) Define Multinomial probability distribution & write its pdf.

h) Given the ollowing table ,find E(X).

X	-3	-2	-1	0	1	2	3
P(X)	0.05	0.10	0.30	0	0.30	0.15	0.10

i) Find the mean of a discrete uniform probability distribution if there are 6 (Six) possible outcomes.

j) Describe briefly about Cauchy probability distribution.

Answer any FOUR of the following questions.   **[6 X 4 = 24]**

4. Prove ,If X is a random variable ,then $V(aX + b) = a^2 V(X)$

OR

let the random variable X has the distribution :

$P(X=0) = P(X=2) = p$ $P(X=1) = 1-2p$, for $0 \le p \le 1$,then

For what value of p is the Var (X) a maximum ?

5. There are 10 vegetable cans,6 of which are of Tomatoes and 4 are of Corns.

Three are selected randomly without replacement. Determine the probability

Distribution and also mean & variance of the random variable as the number

Cans of corns.

OR

A box contains 4 white balls ,3 black balls ,& 5 red balls A ball is drawn from the box at random.Its color noted and then the ball is replaced .If 6 balls are drawn in this manner then find the probability that 3 are white, 1 is black and 2 are red .

6. Prove that Poisson distribution is a limiting case of Binomial distribution .

OR

A machine produces instrument lifespans that are normally distributed with

a mean of 12 months and a standard deviation of 2 months.

i. What is the Probability that a randomly selected instrument will last more than 14 months?

ii. What is the probability that another randomly selected machine will last for at best 8 months?

7. What is Weibull Probability distribution .An item in magnetic field is

Exposed to corrosive gas. Life time of a Disk follows Weibull distribution

with parameters $\alpha = 300 \ and \ K = 0.5$. What will be the probability of

it

(i) failing before 500 hours ? (ii) lasts 60 hours or more?

OR

Describe about Central Limit Theorem with diagram. A certain type of water bottle has a   mean weight of 1.5 kgm and a standard deviation of 0.2 kgm.If you select a sample of 100 bottles ,what is the probability that the mean weight of your sample will be between 1.45 kgm and 1.55 kgm. ?

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II-S-B.Sc.-DS-(H)-CC-IV-(P&D)

2025

FULL MARKS-60
TIME- As in the Programme
The figures in the right-hand margin indicates marks
Answer ALL Questions

1. **Answer all questions.**   **[1 X 8 = 8]**

   a. Differentiate between run time & compile-time initialization of an array.
   b. What is asymptotic notation**?**
   c. Define circular linked list**.**
   d. The under flow conditions for queue is _____.
   e. How many minimum number of nodes that a binary tree can have ?
   f. What is a sparse matrix**?**
   g. Define complete binary tree**.**
   h. What is the balance factor **i**n an AVL tree?

2. **Answer any EIGHT of the following questions.**   **[1.5 X 8 = 12]**
   a. What is dynamic memory allocation?
   b. Write any two applications of **stack**.
   c. Find the top value for the following stack operation
      Push(8), Push(10), Pop, Push(3), Push(7), Pop, Push(12), Push(13), Pop, Pop.
   d. When a tree is called as strictly binary tree?
   e. Define hashing**.**
   f. Define max-heap and min-heap**.**
   g. What is MST **?**
   h. Define internal sorting**.**
   i. Evaluate the following postfix expression**:**
      4 6 2 + * 12 3 / -
   j. Write applications of trees.

   Answer any EIGHT of the following questions.   **[10 X 4 = 40]**
3. Write an algorithm to insert a node after a given node using doubly linked list**.**

                    Or

   Write an algorithm to implement a circular queue with its operations.

4. Write an algorithm to remove all the duplicate elements except the first one in an array.
                    Or

   Write different algorithms to perform various operations on stack**.**

5. Define an AVL tree. Briefly explain all the rotations of an AVL tree. Construct an AVL tree using the following sequence of insertions:

    14, 17, 11, 7, 53, 4, 13, 12, 8, 60, 19, 16, 20

    Or

    Explain different traversal techniques of a binary tree with suitable examples.

6. Write an algorithm to implement Quick Sort .Explain the working of Quick Sort on the following data:

    10, 15, 0, 17, 20, 25, 30, 16, 70, 6

    or

    Write an algorithm for Binary Search and discuss its speed compared with Linear Search.

★

II-S-B.Sc.-DS-(H)-GE-II-(DSA)