2024

COMPUTER SCIENCE

B.Sc. Third Semester End Examination - 2024

PAPER - MI02

Data Structure (Minor)

Full Marks : 40 *Time : 2 hours*

The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in their own words as far as practicable.
Illustrate the answers wherever necessary.

1. Answer any Five. **5×2=10**

(a) What is call by value? 2

(b) What is Linear data structure? Give example. 2

(c) Define queue. 2

(d) What is Break and continue statement? 2

(e) Write two disadvantages of an Array. 2

(f) Define PUSH and POP operation on a stack. 2

(g) What is operator in C? 2

(h) What is the difference between ++i and i++. Give one example. 2

Group - B

Answer any Four. **4×5=20**

2. Write an algorithm to search an element from an array using Linear Search Technique. 5

3. (a) Explain Infix, Prefix and Postfix expression.

   (b) Convert the following into its Postfix expression.

   (a+b)*(m/n)+(x+y)

4. What do you mean by loops in C? Differentiate between while and do-while loops. 5

5. Write an algorithm to sort elements of an array in ascending order using selection sort technique. 5

6. Explain single and double linked list with proper example.5

7. (a) Define Complete Binary Tree.

   (b) Show the structure of BST after adding each of the following values in that order : 2+3

   2, 5, 1, 7, 10, 9, 11, 6

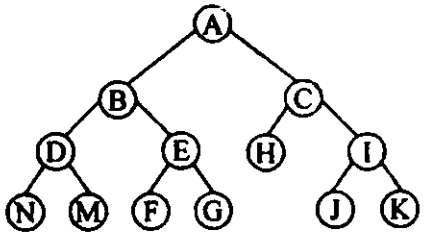
Group - C

Answer any one. **1×10=10**

8. (a) Write an algorithm to insert on element in a queue. 3

   (b) Explain PREORDER and POSTORDER Traversal of a Binary search tree with proper example. 3

   (c) Write the INORDER Traversal for the following BST. 4



9. (a) Sort the following elements by using Bubble sort technique. 5

   12 6 3 7 17 13 11 15 4

   (b) Differentiate betwee recursion and iteration with proper example. 3

   (c) Write two applications of tree. 2