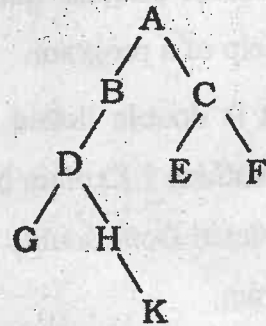


(4) TBC-201/TBI-201

5. (a) Find the Inorder, Preorder, Postorder traversal of given binary tree. (CO5)



- (b) Explain the different file organization concepts using proper examples. (CO5)
- (c) Write brief note on following : (CO5)
- (i) Binary Tree
 - (ii) Complete Binary Tree

TBC-201/TBI-201

1,350

Roll No.

TBC-201/TBI-201

B. C. A./B. Sc. (IT)
(SECOND SEMESTER)
END SEMESTER EXAMINATION,
July/Aug., 2022

DATA STRUCTURES AND FILE
ORGANIZATION

Time : Three Hours

Maximum Marks : 100

- Note :** (i) All questions are compulsory.
- (ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.
- (iii) Total marks in each main question are **twenty**.
- (iv) Each sub-question carries 10 marks.
1. (a) Define data structure. Explain primitive and non-primitive data structures in details. (CO1)

P. T. O.

(2) TBC-201/TBI-201

(b) Write a brief note on the following : (CO1)

- (i) Array
- (ii) Pointers

(c) Write a program to show deletion process in single dimensional Array. (CO1)

2. (a) What is polish notation ? Solve the following arithmetic expression written in postfix notation by stack : (CO2)

5, 6, 2, +, *, 12, 4, /, -

(b) What is Stack ? Explain linked representation of Stack with the help of 'C' program. (CO2)

(c) Convert following arithmetic infix expression into postfix by using stack : (CO2)

$A*(b + c) + (b/d)*a + z * u$

3. (a) Write a function in 'C' to find an element from a given linked list. (CO3)

(3) TBC-201/TBI-201

(b) How circular linked list can be used to implement circular queue ? explain with the help of a program. (CO3)

(c) What is double linked list ? What are its applications ? Explain how an element can be deleted from doubly linked list using C program. (CO3)

4. (a) How binary search is different from linear search ?

Apply binary search to find item 89 in the sorted array : (CO4)

7, 14, 28, 34, 41, 50, 60, 66, 80, 89, 100

(b) Write a program to perform insertion sort. (CO4)

(c) Simulate the bubble sort sorting algorithm and show the step by step procedure to sort the given data values in ascending order.

23, 11, 37, 28, 15, 19, 55, 9