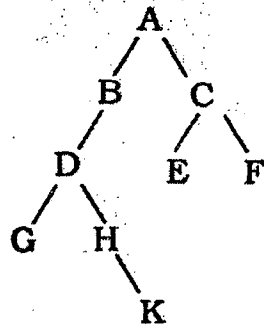


(4) TBC-201/TBI-201

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

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