

UG 3rd Semester Examination 2021

Computer Science (Honours/General)

Paper Code - DC 3/GE 3

Data Structure using C

[CBCS]

Full Marks: 32

Time: 2Hours

(The figure in the margin indicate full marks)

Group-A

1. Answer any six questions: 2 × 6 = 12
- a) What is ADT?
 - b) What is recursion?
 - c) What is binary tree?
 - d) What is linear and non-linear data structure?
 - e) Differentiate between queue and stack.
 - f) Write the limitations of array.
 - g) What is linked list?

Group-B

Answer *any two* questions

10 × 2 = 20

2. a) Sort the given elements using Bubble sort: 5
35 70 35 20 85 60 55 54 45 63
- b) Differentiate Binary Search and Linear Search. 5
3. a) Draw the expression tree of the following: 5
$$A * B - (C + D) * (P / Q)$$
- b) Write an algorithm to perform post-order traversal of a binary tree.
Traverse the generated binary tree mentioned in 3. a). 4+1=5
4. a) Write algorithm to implement a queue that performs enqueue and dequeue operations. 5
- b) Explain circular queue in brief. 5