



22224/B 320

Reg. No.

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II Semester B.C.A.2 Degree Examination, May 2016

(RCU – Repeaters)

DATA STRUCTURES USING C

Time : 3 Hours]

[Max. Marks : 80

Instructions : 1) Answer all Sections.

2) Draw neat diagrams wherever necessary.

SECTION – A

I. Answer **any ten** of the following questions :

(10 × 2 = 20)

1. What is pointer? Write any two advantages.
2. Define sequential search. List its advantages.
3. What are the various file positioning function?
4. Explain realloc () function with syntax.
5. Differentiate between linear search and binary search.
6. Define non-primitive data structure. Give example.
7. List out applications of stack.
8. Define the terms : (a) degree of node (b) circular queue.
9. What is linked list? How do you define node?
10. What is strictly binary tree? Give example.
11. Define infix, prefix, postfix expression.
12. What is the use of fscanf() and feof () functions?



SECTION – B

- II. Answer **any six** of the following : **(6 × 5 = 30)**
13. Write a program to implement tower of Hanoi problem.
 14. Define stack. Explain stack operations with an example.
 15. Write a program to sort an elements using bubble sort.
 16. Convert the following to postfix.
 - (a) $(A + B) * (C + D) \$ (E + D)$
 - (b) $(A + B \$ C \$ D) * (E + F/D)$
 17. What is circular queue? Explain how it is different from an ordinary queue.
 18. Write a note on circular linked list.
 19. Explain pre-order, post-order for binary tree.
 20. Explain the working of doubly linked list with neat diagram.

SECTION – C

- III. Answer **any three** of the following : **(3 × 10 = 30)**
21. (a) Define file. Explain file error handling functions.
(b) Write a note on dynamic memory allocation. **(5 + 5)**
 22. What is queue? Explain the operations of double ended queue.
 23. Describe different insertion of nodes in linked list.
 24. Write a program on quick sort. Apply technique to sort the numbers 47, 60, 73, 54, 14, 33, 25.
 25. Briefly explain (a) complete binary tree (b) binary search tree.