No. of Printed Pages : **2**

32224/B240

Reg. No. | | | | | | | | |

II Semester B.C.A.3 Degree Examination, May - 2019

DATA STRUCTURE USING C

Theory

RCU (Repeaters)

Time : 3 Hours Max. Marks : 80

Instructions : *(1) Answer **all** parts.*
(2) Draw neat diagram wherever necessary.
(3) Write question numbers correctly.

PART - A

1. Answer **any ten** of the following : **10x2=20**

(a) Define structure ? Write the syntax of structure.

(b) Write the syntax of get c ( ) and put c ( ) functions.

(c) Mention the types of dynamic memory allocations.

(d) What do you mean by postfix expression ? Give an example.

(e) Define recursion. Give an example.

(f) Mention any two advantages of Doubly Linked List.

(g) What is self-referential structure ?

(h) What do you mean by stack ?

(i) Mention the techniques of Binary tree traversal.

(j) How do you declare a file pointer ?

(k) What do you mean by complete binary tree ?

(l) List the applications of a queue

P.T.O.

PART - B

Answer **any four** of the following : **4x5=20**

2. Write a program to implement the working of a simple queue.

3. Convert the following infix expression to postfix and prefix form.
(x ^ y) + z * M - N / (p * Q)

4. Write a program to find GCD of two numbers.

5. Explain any two types of Linked List.

6. Write a note on error handling in files.

7. Define Binary tree. Explain the binary search tree.

PART - C

Answer **any four** of the following : **4x10=40**

8. (a) Differentiate between malloc ( ) and calloc ( ). **5**

(b) Explain five file I/O functions **5**

9. Explain the classification of data structures in detail. **10**

10. Write a program to demonstrate the working of singly linked list. **10**

11. (a) Explain primitive operations on stack. **5**

(b) Write a program to find binomial co-efficient using recursion. **5**

12. Define the following terms with example : **5x2=10**

(a) Node
(b) Depth
(c) Root
(d) Sibling
(e) Substree

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