M (Printed Pages 4)

(20115) Roll No. .....

BCA - III Sem.

18012

BCA Examination, Dec. 2014

Data Structure using 'C' and C++

(BCA-302)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note: Attempt **all** the Sections as per instructions.

Section-A

(Very Short answer Questions)

Note: Attempt all the **five** questions. Each question carries **03** marks. Very short answer is required not exceeding 75 words.

1. How 2-dimensional arrays can be represented? 03

P.T.O.

2. What is D-queue? 03
3. Give the linked representation of any list? 03
4. Differentiate between searching and sorting? 03
5. Briefly explain Full binary tree with example. 03

Section-B

(Short answer questions)

Note: Attempt any **two** questions out of the following 03 questions. Each question carries 7.5 marks. Short answer is required not exceeding 200 words.

6. What are various operations that can be performed on linked list? Write an algorithm to insert a given element at the beginning position of given linked list. 7.5
7. What is B-Tree? How B-Tree can be created? Explain with a suitable example. 7.5

8. What is prefix form of any expression? Write a program in C Language to convert any given infix expression into prefix form. 7.5

Section-C

(Detailed answer questions)

Note: Attempt any **three** questions out of the following **5** questions. Each question carries **15** marks. Answer is required in detail.

9. Explain the following Binary Tree Traversal algorithm with suitable example: 15

   (a) Inorder

   (b) Pre order

   (c) Post order

10. Explain following terms in relation with stack:

    (a) Push operation with example 6

    (b) Pop operation with example 6

    (c) Applications 3

11. What do you meant by searching? Explain Binary Search technique with a suitable example. 15

12. Explain Heap Sort with a suitable example. 15

13. Write a note on following (any **three**): 3×5=15

    (a) Evaluation of Postfix expression

    (b) Linear Search

    (c) Header Linked List

    (d) Vector representation of Sparse arrays