



ML-3733

B.C.A. (Sem. III) (CBCS) Examination

October / November – 2015

Data Structures

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशांश विषय निशानीवाणी विगतो उत्तरवही पर अवश्य बहनी. Fillup strictly the details of signs on your answer book.	Seat No. : <input type="text"/>
Name of the Examination : B.C.A. (SEM. III) (CBCS)	<input type="text"/>
Name of the Subject : DATA STRUCTURES	<input type="text"/>
Subject Code No. : <input type="text" value="3"/> <input type="text" value="7"/> <input type="text" value="3"/> <input type="text" value="3"/> Section No. (1, 2,.....) : <input type="text" value="Nil"/>	Student's Signature

- (2) Write to the point.
- (3) Provide examples and diagrams wherever appropriate / necessary.
- (4) Figures to the right indicate full marks to the question.

1 Answer Following: (Any Seven) 14

- (a) Define Double ended queue with an example.
- (b) What will be the position of front and rear if queue is full?
- (c) Explain recursion? Mention rules of Tower of Hanoi game.
- (d) List out application of Stack.
- (e) Convert infix to postfix :
 $O + (D * F - (G / V ^ P) * C) * S$
- (f) Explain application of link list.
- (g) Write difference between linear and binary search?
- (h) Explain difference between singly link list and doubly link list?

2 (A) What is Stack? List out operation of Stack? Write down an algorithm of various operations on Stack. 7

OR

(A) What do you mean by Tree? Explain 2-3 tree. 7

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[Contd...

(B) What is double ended queue? Explain input restricted and output restricted Dqueue. Write down an algorithm to insert and delete element in output restricted D-queue. 7

3 (A) What is searching? Discuss difference between binary search and linear search. Write down an algorithm of Binary search. 7

OR

(A) What is tree? Explain AVL tree with example. 7

(B) What is sorting? Discuss insertion sort with an example. 7

4 (A) Describe the concept of singly link list. Write an algorithm to perform insert and deletion in singly link list. 7

OR

(A) Write an algorithm to convert infix expression in to postfix. 7

(B) What is sorting? Explain 2-Way merge sort with an appropriate example. 7

5 (A) Construct tree of following expression and write down inorder, preorder and postorder. 5

$$A*(B+C)-A/B +C$$

(B) Write down short note of AVL trees. 5

(C) Difference between linear and non linear data structure. 2

(D) Difference between dynamic memory allocation and static memory allocation. 2

OR

(D) Explain Simple, Strickly & Complete binary tree. 2