



KA-3790

Second Year B. C. A. (Sem. III) (CBCS) Examination  
September / October - 2012  
Paper - 304 : Data Structure

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशांशक निशानीवाणी विगतो उत्तरपत्री पर अवश्य कपनी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
S. Y. B. C. A. (CBCS) (SEM. 3)

Name of the Subject :  
304: DATASTRUCTUR

Subject Code No. : 3 7 9 0 Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

(2) Marks are indicated to the right side of question.

- 1 Answer following : (any five) 10
- What is meaning of int \*\*a ?
  - What is use of typedef ?
  - What will be the position of front and rear if circular queue is full ?
  - When 'stack overflow' occur ?
  - How a new node is created from structure using a structure pointer for a singly link list ?
  - What is difference between root node and leaf node ?

- 2 (a) What is tree ? What is difference between complete binary tree and balanced binary tree ? Discuss various terminologies related to tree. 7

OR

- Explain Traversal Techniques for Traversing binary Tree. Discuss difference between them. 7
- What is difference between sequential search and binary search ? Explain their performance. 5

OR

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[Contd...

- (b) Name various sorting methods. Which sorting technique is faster ? 5
- (c) Write prefix and postfix expression for : 3  
 $(a * b)^2 - (c/d - e)$ .
- 3 (a) What is stack ? Explain different stack operations. 7  
**OR**
- (a) Explain the concept of queue. Compare stack and queue. 7
- (b) Explain circular queue operations. 5  
**OR**
- (b) Discuss double ended queue. Explain its operations. 5
- (c) Name various primitive and non-primitive data structures. 3
- 4 (a) Describe concept of dynamic memory allocation. How a link-list node is created ? 7  
**OR**
- (a) Explain singly link-list. How to create, insert and delete node from singly link-list ? Explain their algorithm. 7
- (b) How to display node values in reverse order for doubly link-list ? Explain their algorithm. 5  
**OR**
- (b) What is recursion ? Explain algorithm to display factorial for given number using recursion. 5
- (c) What is difference between pointer to array and array of pointers ? 3
- 5 Answer following : (any three) 15
- (a) Algorithm to implement stack using doubly link list.
- (b) Difference between quick sort and bubble sort.
- (c) Compare array and link-list.
- (d) Explain weight balanced tree and height balanced tree.
- (e) Explain application of stack and queue.