



P-3733
Second Year B. C. A. (Sem. III) (CBCS) Examination
March/April – 2014
Paper - 304 : Data Structure

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

<p>नीचे दसावयव निशानीवाणी विगतो उत्तरवदी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination :</p> <p>S. Y. B. C. A. (Sem. 3) (CBCS)</p> <p>Name of the Subject :</p> <p>Paper - 304 : Data Structures</p> <p>Subject Code No. : 3 7 3 3 Section No. (1, 2,.....) NIL</p>	<p>Seat No. :</p> <table border="1" style="width: 100%; height: 30px;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table> <div style="border: 1px solid black; border-radius: 15px; height: 80px; margin-top: 10px; display: flex; align-items: center; justify-content: center;"><p>Student's Signature</p></div>						

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

1 Answer following : (any seven) 14

- (a) What do you mean by forest? Explain with an example.
- (b) What do you mean by NULL in link list? Explain with an example.
- (c) What is the condition of overflow in simple queue?
- (d) What is Recursion?
- (e) What do you mean by non-linear data structure? List out non-linear data structures.
- (f) Explain use of 'typedef' with an example.
- (g) What is an array of pointer?
- (h) List out applications of stack.

2 (a) What is Stack ? List out operation on Stack ? 7

OR

- (a) What is tree? Explain the concept of binary tree. Discuss various terminologies related to tree.
- (b) What is linear data structure? Discuss difference between FIFO and LIFO concept. 7

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

OR

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[Contd...

- (a) What is sorting? Explain any two sorting techniques and their complexities.
- (b) What is queue? Explain difference between circular and simple queue. **7**
- 4** (a) Describe the concept of Circular singly link list. Write an algorithm to perform insert and deletion from particular position in Circular singly link list. **7**
- OR**
- (a) What is double ended queue? Explain input restricted and output restricted Dqueue. Write down an algorithm of input restricted Dqueue., **7**
- (b) How to implement stack using link-list ? **6**
- 5** Answer following : (any three) **15**
- (a) Construct tree of following expression and write down preoder, inorder and postorder :
 $((A+B)/D)^{(E-F)*G}$
- (b) Write short note on Polish notation.
- (c) How to pass pointers to functions ? Explain providing appropriate example.
- (d) How to create node in link-list? Explain difference between creation of singly link-list node and doubly link-list node. Give appropriate example.