



DMM-3112
Second Year B. Sc. (Computer Science)
(Sem. IV) Examination
March / April - 2016
Paper - III : Data Structure
(Old Course)

Time : 2 Hours]

[Total Marks : 50

Instruction :

<p>नीचे दशांशवले निशान्तीवाणी विगतो उत्तरवडी पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : ☛ Second Year B. Sc. (Computer Science) (Sem. IV)</p> <p>Name of the Subject : ☛ Paper - III : Data Structure (Old Course)</p> <p>☛ Subject Code No. : 3 1 1 2 ☛ Section No. (1, 2.....): NIL</p>	<p>Seat No. : <input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; width: 100%;">Student's Signature</div>
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- 1 Answer in short : 10
- (a) What do you mean by Data Structure ? List applications of data structure in computer science.
 - (b) What is Circular Link List ? How it is different than singly link list ?
 - (c) What do you mean by complete binary tree ?
 - (d) Define Graph. List applications of graph.
 - (e) What is difference between input restricted and output restricted dequeue ?

- 2 (a) What is Queue data structure ? Explain algorithm to insert and delete element from Circular Queue. 6
- (b) Explain recursion taking proper example. 4

OR

- (a) Find out the Binary tree from the given information : 6
Inorder : D H B E A F C I G J
Preorder : A B D H E C F G I J
- (b) Discuss Threaded presentation of Tree. 4
- (c) Explain polish and reverse polish notation with proper example. 4

3 (a) Explain Breath first search in graph. How it is different than Depth first search. 6

(b) Write algorithm to add an element at beginning in singly link list. 4

OR

(a) Explain search tree with proper example. 6

(b) Convert following infix expression to postfix expression. 4

(i) $a + b / c *(d + e)$

(ii) $(m + n) * ((o - p) ^ q)$

(c) Discuss advantages of Link List over Array. 4

4 Answer the following : (any three) 12

(a) Discuss algorithm to push and pop element in stack.

(b) Discuss applications of Queue Data Structure.

(c) Give classification of data structure.

(d) List different ways of traversing binary tree. Discuss any one.

(e) What is link list ? List different types of link list.
