



**DMM-3092**  
**Second Year B. Sc. (Computer Science)**  
**(Sem. IV) Examination**  
**March / April - 2016**  
**Data Structure : Paper - III**  
**(New Course)**

Time : 2 Hours]

[Total Marks : 50

**Instruction :**

<p>नीचे दृशावेव निशानीवाणी विगतो उत्तरवडी पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : ☛ <b>Second Year B. Sc. (Computer Science) (Sem. IV)</b></p> <p>Name of the Subject : ☛ <b>Data Structure : Paper - III (New Course)</b></p> <p>☛ Subject Code No. : <b>3 0 9 2</b> ☛ Section No. (1, 2,.....): <b>NIL</b></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
- (1) What do you mean by Tree Data Structure ? List uses of Tree in computer science.
  - (2) What do you mean by FIFO ? Give real world examples of FIFO.
  - (3) How link list is better than array ?
  - (4) What do you mean by complexity of algorithm ?
  - (5) What is Polish and Reverse Policy notations ?
- 2 (a) What is Queue data structure ? Explain algorithm to insert and delete element from Circular Queue. 6
- (b) Write an algorithm to find factorial of given number using recursion. 4
- OR**
- (a) Write a program to create ordered singly link list. 6
- (b) How stack is used in recursion ? 4
- (c) Draw binary tree for given mathematical expression. 4
- $a * b / c - (d+e) * f ^ g$

- 3 (a) Explain Quick Sort with example. 6  
(b) Discuss operations which can be done on non-primitive data structures. 4

OR

- (a) Write algorithm to convert infix expression to postfix expression using stack. 6  
(b) Explain 2-3 Tree with example. 4  
(c) Discuss classification of Data Structure. 4
- 4 Answer the following : (any three) 12  
(a) Discuss Dequeue in detail.  
(b) Discuss applications of stack.  
(c) Compare singly link list with doubly link list.  
(d) Explain Binary tree with proper example.  
(e) Define Graph. Compare it with tree.

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