

**B.Sc. (I. T.) Sem. - II (2011 Course) : WINTER - 2018**

**SUBJECT: DATA STRUCTURES**

Day: Wednesday

Date: 21/11/2018

**W-2018-1096**

Time: 10.00 am to 12.00 Noon

Max Marks: 40

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**N.B:**

- 1) Answer any **FIVE** questions.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat diagrams **WHEREVER** necessary.
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- Q.1** Explain the terms – INFIX, POSTFIX & PREFIX expressions. Convert the following INFIX expression to POSTFIX & PREFIX forms: **(08)**
- a)  $1 + (m * n) / o - (p * q)$   
b)  $a \$ (b * c) - (d + e) / f / (h + i)$
- Q.2** Define Queue. Describe its operation in detail. Also explain the various types of queue? **(08)**
- Q.3** Write an algorithm to read N integers & create a tree structure to store these integers & print its contents level-wise. **(08)**
- Q.4** Distinguish between BFS & DFS, with illustrative examples. **(08)**
- Q.5** Clearly explain, doubly linked list operation, in detail, with illustration. **(08)**
- Q.6** Clearly explain Any One sorting algorithm, in detail, with illustration. **(08)**
- Q.7** Write Pseudo algorithm for Binary Search. Explain it with suitable example and discuss it's time complexity. **(08)**

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