B.SC. (I. T.) SEM. - II (2011 COURSE) : WINTER - 2017

SUBJECT: DATA STRUCTURES

Day: **Tuesday** Time: **02.30 PM TO 04.30 PM**

Date: **19/12/2017** **W-2017-0865** Max Marks: 40

N.B:

1) Answer any **FIVE** questions.
2) Figures to the right indicate **FULL** marks.
3) Draw neat diagrams **WHEREVER** necessary.

Q.1 Explain malloc (), calloc (), realloc () & free() function with suitable examples. **(08)**

Q.2 Distinguish between Linear & Binary Search algorithms, with illustrative examples. **(08)**

Q.3 What is a Data Structure? Explain its importance, with practical use- case scenario? **(08)**

Q.4 Differentiate between the functionality of a stack & a Queue. Also describe pros and cons for each. **(08)**

Q.5 Clearly explain the differences between a structure array & singly linked list, with illustrative examples. **(08)**

Q.6 Describe Bubble Sort algorithm in detail with illustration. **(08)**

Q.7 Explain the terms – INFIX, POSTFIX and PREFIX expressions. Show the steps in converting the following INFIX expression to POSTFIX & PREFIX. Show stack at every step: **(08)**

a) (A + B) * C - D
b) (A + (B – C * D / E) / F)

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