Code: 13A05301 **R13**

B.Tech II Year I Semester (R13) Supplementary Examinations June 2016

DATA STRUCTURES

(Computer Science and Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) Describe about system life cycle.
(b) What is an abstract data type? Give two examples for ADT.
(c) Write applications of heap sort.
(d) Discuss about Selection trees.
(e) State various operations performed on graphs.
(f) What is a dictionary? List its operations.
(g) Define priority queue. Give two applications of it.
(h) Write about minimum heap.
(i) Discuss about Splay trees.
(j) Write applications of multi-way search trees.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 What is double linked list? Write code for insertion of a node, deletion of a node and search a node.

OR

3 (a) List different operations on stack.
(b) Write a C code to represent Queue as an array and perform insertion and deletion on it.

UNIT – II

4 Explain how to implement merge sort on a given n numbers and show its complexity.

OR

5 (a) Quick sort is not effective when compared with merge sort in some case. Justify it with an example.
(b) Write about various tree traversal techniques.

UNIT – III

6 (a) Distinguish between static and dynamic hashing.
(b) Explain how a graph can be represented as a Linear List.

OR

7 (a) Describe about Graph abstract data type.
(b) How a graph is represented as a hash table.

UNIT – IV

8 Write a program to Implement heap as a priority queue.

OR

9 (a) What is Fibonacci heap? Explain its functionality.
(b) Describe about single ended priority queue.

UNIT – V

10 What is an OBST? Implement its operations.

OR

11 Write short notes on the following:

(a) AVL trees.
(b) B+ trees.

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