Reg. No. : ☐☐☐☐☐☐☐☐☐☐

Question Paper Code: 53022

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Computer Science and Engineering

15UCS302 - DATA STRUCTURES

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Stack is also called as

    (a) Last in first out   (b) First in last out   (c) Last in last out   (d) First in first out

2. A binary search tree whose left subtree and right subtree differ in high by at most 1 unit is called

    (a) AVL tree   (b) Red-black tree   (c) Lemma tree   (d) None of these

3. Tree structure diagram in which pointers of data are stored at leaf nodes of diagram is classified as

    (a) b tree   (b) b+ tree   (c) b2 tree   (d) B* tree

4. A technique for direct search is

    (a) Binary Search   (b) Linear Search   (c) Tree Search   (d) Hashing

5. How many nested loops are present in Prim's Algorithm

    (a) 1   (b) 2   (c) 3   (d) 4

PART - B (5 x 3 = 15 Marks)

6. What is Binary Tree? Give an example.

7. Illustrate the splay tree.

8. What is binary search tree?

9. Define Hashing.

10. What is network flow problem?

PART - C (5 x 16 = 80 Marks)

11. (a) Explain in detail about the general tree structure. (16)

Or

(b) Explain with example threaded binary tree. (16)

12. (a) Explain the basic operations of binary search tree in detail. (16)

Or

(b) Explain the AVL Tree with an example. (16)

13. (a) Explain the insertion and deletion operations in heap. (16)

Or

(b) Discuss about the decision tree with example. (16)

14. (a) Explain in detail about the Linear Probing and Quadratic Probing. (16)

Or

(b) Distinguish between rehashing, extendible hashing and its applications. (16)

15. (a) Explain the Dijkstra's single source shortest path problems. (16)

Or

(b) Discuss in detail about minimum spanning tree. (16)

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