

BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - III Computer Science & Engineering : SUMMER : 2025
SUBJECT: NON-LINEAR DATA STRUCTURES

Day : Tuesday
Date : 13/05/2025

S-25310-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Assume suitable data, if necessary.
- 4) Draw neat and labeled diagrams, **wherever** necessary.

Q.1 Distinguish between DFS and BFS algorithms. Explain with example. (10)

OR

Q.1 Describe the graph ADT, operations of a typical graph ADT and its formalism. (10)

Q.2 What is Binary search trees, explain the various operations in BST. (10)

OR

Q.2 Difference between Binary Tree and Binary Search Tree. (10)

Q.3 Create a Red Black tree by inserting following sequence of number 8, 18, 5, 15, 17, 25, 40, 80. (10)

OR

Q.3 Explain Splay tree and the types of rotation used for splaying with example. (10)

Q.4 Give the complexity, the advantages and disadvantages of Heap sort. (10)

OR

Q.4 Write short notes on Heaps as Priority Queue. (10)

Q.5 Explain expandable and dynamic hashing in detail. (10)

OR

Q.5 Comment on the advantages and disadvantages of Extendible Hashing. (10)

Q.6 What is the KMP algorithm, Give its complexity? Explain the same with example. (10)

OR

Q.6 Write brute force pattern matching algorithm and explain with example. (10)

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