## SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
### (AUTONOMOUS)
**M.Tech I Year I Semester Regular &Supplementary Examinations February-2025**
### ADVANCED DATA STRUCTURES
**(Computer Science and Engineering)**

Time: 3 Hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

### UNIT-I

| | | | | | |
|---|---|---|---|---|---|
| 1 | | Explain Collision Resolution Techniques in Hashing. | CO1 | L3 | 12M |

**OR**

| | | | | | |
|---|---|---|---|---|---|
| 2 | a | What are all the operations on linear probing? Explain. | CO1 | L4 | 6M |
| | b | Compare and explain the Challenges in Linear Probing. | CO1 | L2 | 6M |

### UNIT-II

| | | | | | |
|---|---|---|---|---|---|
| 3 | a | With an example Explain basic operations on skip list. | CO2 | L3 | 6M |
| | b | Explain the structure of probabilistic skip list. | CO2 | L2 | 6M |

**OR**

| | | | | | |
|---|---|---|---|---|---|
| 4 | a | Differentiate between probabilistic and deterministic skip list. | CO2 | L4 | 6M |
| | b | Discuss the Need for Randomizing. | CO2 | L2 | 6M |

### UNIT-III

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|---|---|---|---|---|---|
| 5 | | Implement the text processing software by applying brute force pattern matching. | CO3 | L3 | 12M |

**OR**

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|---|---|---|---|---|---|
| 6 | a | With an example solve the moore algorithm problem. | CO3 | L4 | 6M |
| | b | Explain components of The Knuth-Morris-Pratt (KMP)Algorithm. | CO3 | L2 | 6M |

### UNIT-IV

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|---|---|---|---|---|---|
| 7 | | Explain how to Search a Priority Search Tree works and its operations. | CO4 | L3 | 12M |

**OR**

| | | | | | |
|---|---|---|---|---|---|
| 8 | | Construct the priority search tree and find the space complexity. | CO4 | L4 | 12M |

### UNIT-V

| | | | | | |
|---|---|---|---|---|---|
| 9 | a | What is hashing? Explain about message digest and password verification. | CO5 | L3 | 6M |
| | b | Describe various cryptographic hashing functions. | CO5 | L2 | 6M |

**OR**

| | | | | | |
|---|---|---|---|---|---|
| 10 | | Explain some real facts about hashing. | CO5 | L4 | 12M |

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