**Q.P. Code:** 20CS5001 **R20**

**Reg. No:** | | | | | | | | | | |

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**

(AUTONOMOUS)

**M.Tech I Year I Semester Regular & Supplementary Examinations May/June-2022**

**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 | | Define Hashing? Explain Hash Functions with suitable example. | L3 | 12M |
| | | **OR** | | |
| 2 | a | Define Dictionaries. | L1 | 4M |
| | b | How to implement dictionaries? | L2 | 8M |

**UNIT-II**

| | | | | |
|---|---|---|---|---|
| 3 | a | Give the properties of deterministic skip list. | L4 | 6M |
| | b | Differentiate between probabilistic and deterministic skip list. | L5 | 6M |
| | | **OR** | | |
| 4 | a | What is binary search tree and explain advantages of binary search tree. | L3 | 6M |
| | b | Create a binary search tree with the following data elements 35, 14, 56, 75, 11, 52, 18, 32, 47. | L5 | 6M |

**UNIT-III**

| | | | | |
|---|---|---|---|---|
| 5 | | Implement the text processing software by applying brute force pattern matching | L6 | 12M |
| | | **OR** | | |
| 6 | a | Explain components of The Knuth-Morris-Pratt (KMP) Algorithm. | L3 | 6M |
| | b | Calculate with example Running time analysis of KMP algorithm. | L6 | 6M |

**UNIT-IV**

| | | | | |
|---|---|---|---|---|
| 7 | | Explain how to Search a Priority Search Tree works and its operations? | L2 | 12M |
| | | **OR** | | |
| 8 | a | Define range searching and find the general time complexity | L1 | 4M |
| | b | Explain one dimensional range searching in static and dynamic way. | L4 | 8M |

**UNIT-V**

| | | | | |
|---|---|---|---|---|
| 9 | | Describe various cryptographic hashing functions. | L3 | 12M |
| | | **OR** | | |
| 10 | | Explain in brief applications of hashing. | L3 | 12M |

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