Code No.: CS8102PC | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD

UGC AUTONOMOUS

I–M.Tech–I–Semester End Examinations (Regular) July- 2021

ADVANCED DATA STRUCTURES USING PYTHON (PC- II)

(CSE)

[Time: 3 Hours] **[Max. Marks: 70]**

*1. Answer Any **FIVE** Questions. Each Question Carries 14 Marks*
2. Illustrate your answers with NEAT sketches wherever necessary.

5 x 14M=70M

1 a. What is an Algorithm? Why do we require algorithmic complexity analysis? 7M
b. What is an Dictionary? Explain Implementation of Dictionary with an example program? 7 M

2. Explain the following?
a. Collision Resolution Techniques in Hashing 4 M
b. Linear Probing 5 M
c. Quadratic Probing 5 M

3. a. Justify "Need for Randomizing Data Structures and Algorithms". 7 M
b. Explain about Deterministic Skip Lists. 7 M

4. a. Compare and contrast Binary Search Trees and AVL Trees 7 M
b. write a program to implement Red Black Trees. 7 M

5. Explain the following
a. The Boyer- Moore Algorithm 7 M
b. The Knuth-Morris-Pratt Algorithm 7 M

6. a. Write a program to construct a PrioritySearch Tree? 7 M
b. Write about Two-Dimentional Range Searching? 7 M

7. Explain the following
a. Priority Range Trees 4 M
b. Quadtrees 5 M
c. k-D Trees 5 M

8. Explain the following
a. The Huffman Coding Algorithm 7 M
b. The Longest Common Subsequence Problem (LCS) 7 M

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