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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