**Class Test - 1**                                   **Even Semester 2020-21**

**Subject Code: RCS 087**              **Subject Name: Data Compression**

**Year: Fourth/7sem**                    **Branch: Computer Science & Engineering**

**[Time: 60 minutes]**                    **[Total Marks: 20]**

*CO-1 Describe the fundamental concepts and types of Data Compression and Coding Techniques.*

## SECTION-A

**Attempt any two questions.**                                   **(3×2=6)**

In this section 4 questions each of 3 marks will be there. Students will attempt only 2 questions.

1. Discuss the Probability and Markov models used in Data Compression.
2. Write a note on Modelling and Coding. Consider the following sequence {12,14,16,17,19,21,22,24,26} and find the Residual Sequence.
3. Define the Data Compression and its measures of performance.
4. Explain the terms: a) Prefix Codes b) UDC.

## SECTION-B

**Attempt any two questions.**                                   **(7×2=14)**

In this section 4 questions each of 7 marks will be there. Students will attempt only 2 questions.

1. Differentiate between Lossless and Lossy compression techniques.
2. Briefly explain what are dangling suffix with example.
   Check whether the below mentioned codes are Prefix Codes or not?
   a) {0,1,10,11} b) {0,01,001,0011}
3. Formulate the Entropy formula and calculate for the given sequence {2,1,1,3,4,5,1,2,7,8,8,2,2,3,4,5,10}.
4. a) Explain the term Self Information for both single and 2 individual events both.
   b) Calculate the Self information for the Fair and unfair coin.