Data Compression

(Unit 1)

1. Define Data Compression and Distortion.
2. Define Compression Ratio.
3. What do you understand by Prefix Codes explain it with example.
4. Explain lossless and lossy data compression with example and differentiate both.
5. What is Composite Source Model?

Assignment 2 (Unit 2)

1. Write down the application of Huffman Coding
2. Given eight symbols A, B, C, D, E, F, G and H with probabilities 1/30, 1/30, 2/30, 3/30, 5/30, 5/30 and 12/30
   i) Draw the Huffman tree for these symbols.
   ii) Compute the average no. of bits/symbols.
3. Design 3 bit Tunstall code for $A = \{A, B, C\}$
   $P(A) = 0.7$ $P(B) = .2$, $P(C) = 0.1$
4. Give the Minimum Code Variance Huffman algorithm with example.

Design the flowchart of encoding for Adaptive Huffman Algorithm.

Assignment 3 (Unit 3)

1. Differentiate between JBIG and JBIG2 image compression
2. Generate Binary code for $A = \{a_1, a_2, a_3, a_4\}$ with probabilities $P(a_1) = 0.5$, $P(a_2) = 0.25$, $P(a_3) = 0.125$, $P(a_4) = 0.125$.
3. Explain the different Multi-resolution Approaches.
4. Write down the Exclusion Principle.
5. Write a short note on the basic algorithm of Prediction with Partial match (ppm).