

**B. TECH.**  
**THEORY EXAMINATION (SEM-VIII) 2016-17**  
**DATA COMPRESSION**

*Time : 3 Hours*

*Max. Marks : 100*

*Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.*

**SECTION - A**

1. **Attempt all parts of the following question:**

**10 x 2 = 20**

- (a) What do you understand by entropy ?
- (b) What do you mean by loseless compression?
- (c) Define data compression.
- (d) Define compression ratio.
- (e) Differentiate between Fidelity and quality.
- (f) Discuss binary code.
- (g) Discuss Huffman code
- (h) Define distortion.
- (i) Define the term PPM.
- (j) Discuss Golomb coding.

**SECTION - B**

2. **Attempt any five of the following questions:**

**5 x 10 = 50**

- (a) Explain rice coding and it's implementation.
- (b) Explain minimum variance Huffman code.
- (c) Explain encoding and decoding in LZW algorithm.
- (d) Explain Adaptive Quantization.
- (e) Explain prediction with partial match.
- (f) Explain scalar & vector quantization.
- (g) Explain modeling and coding with the help of example. What do you understand by prefix code?
- (h) What are two observations on which Huffman procedure is based regarding optimum prefix code? What are the various applications of Huffman coding?

**SECTION - C**

**Attempt any two of the following questions:**

**2 x 15 = 30**

3. What do you understand by adaptive quantization? Explain the various approaches to adapting the quantizer parameters.
4. What is Facsimile Enoding? Explain Run-Length coding technique used earlier for Facsimile.
5. What do you understand by Uniform quantizer? How uniform quantization of a uniformly distributed sources and uniform quantization of non-uniform sources is done?