

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 110757

Roll No.

B.Tech.

(SEM. VII) THEORY EXAMINATION, 2015-16

DATA COMPRESSION

[Time : 3 hours]

[Total Marks : 100]

Note: Attempt questions from all Sections as per directions.

Section-A

1. Attempt **all** parts of this section. Answer in brief.

(10x2=20)

- (a) What is data compression?
- (b) Discuss dynamic Markov compression with suitable example.
- (c) Differentiate between lossy and lossless compression.
- (d) Explain the predictive coding techniques in data compression.
- (e) Differentiate between LZ77 and LZ78 data compression techniques.

- (f) Write advantages of vector quantization over scalar quantization.
- (g) How the Linde-Buzo-Gray algorithm works?
- (h) Compare and contrast JPEG and MPEG.
- (i) What benefits are offered by compression schemes in designing systems?
- (j) What are the advantages of using specialized multimedia servers?

Section-B

Attempt any five questions.

(5x10=50)

- 2. Why we need data compression? Explain compression and reconstruction with the help of block diagram.
- 3. Differentiate between static length and variable length coding schemes. Explain with the help of examples.
- 4. Based upon the requirements of reconstruction how data compression techniques are broadly classified. Explain these classifications in brief.

- 5. What are the measures of performance of data compression algorithms?
- 6. What is average information? What are the properties used in measurement of average information.
- 7. Discuss generic compression scheme with the help of block diagram. What are the distortion criteria for Lossy coding?
- 8. Explain uniform and non-uniform quantization with further classifications.
- 9. Explain the procedure for the adaptive Huffman coding and encoding algorithm flowchart.

Section-C

Attempt any two questions.

(2x15=30)

- 10. What do you understand by Markov model? Discuss the role markov models in text compression.
- 11. Explain minimum variance Huffman code and encoding procedure with suitable example.
- 12. What is quantization? Explain additive noise of a quantizer. Differentiate between scalar quantization and vector quantization. What are the advantages of vector quantization over scalar quantization?