

C 20284

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Name.....

Reg. No.....

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2006**

IT 2K 803—DIGITAL SIGNAL COMPRESSION

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 5 marks.

- I. (a) What is meant by variable rate code ? Explain.
(b) Explain the quantization noise in delta modulation system.
(c) Explain what is meant by threshold coding.
(d) Explain what is meant by rate distortion bound.
(e) Explain what is meant by tree structured vector quantization.
(f) Discuss briefly about vector quantization for speech coding.
(g) Explain MPEG standard for video.
(h) What is meant by run-length coding ? Explain.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

- II. (a) Draw the block diagram of lossy predictive coding system and explain.

Or

- (b) Draw the block diagram of adaptive delta modulation system and discuss the function in detail.

- III. (a) Explain about bit allocation algorithm. What is meant by integer bit allocation algorithm ?

Or

- (b) What is meant by subband coding of speech signal ? Explain dynamic bit allocation by subband coding with neat block diagram.

- IV. (a) (i) Explain lattice vector quantization. (7 marks)

- (ii) Explain adaptive vector quantization for speech coding. (8 marks)

Or

- (b) (i) Explain quantizer design based on squared euclidean distance measure. (8 marks)

- (ii) Draw the block diagram of multi-state vector quantizer encoder and explain. (7 marks)

Turn over

- V. (a) (i) Explain image compression by fractal based technique. (8 marks)
(ii) Explain CELP model of speech production. (7 marks)

Or

- (b) (i) Explain Huffman coding procedure for constructing optimal code. (8 marks)
(ii) Write short note on Lempel-ziv algorithm. (7 marks)

[4 × 15 = 60 marks]