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Question Paper Code: 92021

M.E. DEGREE EXAMINATION, OCTOBER - 2014.

Elective

Communication Systems

01PCM505 – DATA COMPRESSION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. State the need for data compression.
2. List out any two storage requirements for multimedia applications.
3. Compare the Arithmetic coding over Huffmann coding.
4. What are the properties of Shannon fano coding?
5. What is meant by A - law companding?
6. State any two application of audio coding.
7. Give the JPEG 2000 standards.
8. Differentiate PCM and DPCM.
9. List out any two standards for PLV performance.
10. State the applications of packet Video.

PART - B (5 x 14 = 70 Marks)

11. (a) (i) Explain the Taxonomy of compression techniques. (7)
(ii) Discuss briefly about the Evaluation techniques in error analysis. (7)

Or

- (b) Describe the scalar and vector quantization theory in detail. (14)
12. (a) (i) Design the Huffman coding with an example. (7)
(ii) Explain the Shannon fano coding with an example. (7)
- Or
- (b) (i) Design the dictionary coding with an example. (7)
(ii) Illustrate the LZW encoding with a suitable example. (7)
13. (a) Explain the concepts of Audio compression techniques in detail. (14)
- Or
- (b) (i) Explain the concepts of Speech compression techniques in detail. (7)
(ii) Discuss about the formant and CELP vocoders. (7)
14. (a) Describe the optimal predictors and optimal quantization in detail. (14)
- Or
- (b) (i) Explain the Contour based compression with an example. (7)
(ii) Discuss about Transform coding in detail. (7)
15. (a) (i) Explain the various types of MPEG video standards. (8)
(ii) Discuss briefly about the H.261 standard and DVI technology. (6)
- Or
- (b) Discuss the motion estimation and compensation techniques in detail. (14)
- PART - C (1 x 10 = 10 Marks)
16. (a) Study and analyze the sub-band coding method for the application to speech coding. (10)
- Or
- (b) Make a study on the implementation of wavelet based compression using SPIHT coders. (10)
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