M.E. First Semester (Electronics & Tele.) (Full Time) (C.G.S.- New)

13336 : Elective-I : Data Compression : 1 ENTC 5

P. Pages : 2

Time : Three Hours

AW - 3902

Max. Marks : 80

Notes :
1. All question carry equal marks.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Retain the construction lines.
5. Illustrate your answer necessary with the help of neat sketches.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) What are the different applications of Huffman coding. Explain any of them in detail. **7**

b) Prove Kraft-McMillan inequality theorem. **6**

OR

2. a) Explain in brief Modeling and coding. **7**

b) What are necessary conditions for an optimal variable length binary code. **6**

3. a) Discuss how arithmetic coding overcomes the problem of assigning integer codes to individual symbols by assigning one code to entire input file, explain with example. **7**

b) Explain in brief: **6**
i) Static dictionary ii) Adaptive dictionary

OR

4. a) Explain compression over modems using V-42 bis standard. **6**

b) With the help of diagram, explain the steps involved in adaptive, context dependent arithmetic coding of binary source symbols. **7**

5. a) Explain Prediction with Partial Match (PPM) algorithm. **7**

b) Explain with appropriate diagram the cloning process. **7**

OR

6. a) Explain three different coding systems defined by JPEG standard. **7**

b) Explain the use of Run length coding in the BMP file format in detail. **7**

7. a) Explain Linde-Buza-Gray algorithm. **7**

b) Explain with diagram Jayant Quantizer. **6**

OR

8. a) Explain with the help of diagram terms related to uniform quantizer. **6**
i) Midrise quantizer ii) Midtread quantizer

b) Define the following terms. **7**
i) Decision boundaries
ii) Reconstruction level
iii) Quantizer distortion

9. a) With the help of diagram explain a two stage Inverse Wavelet transform synthesis Bank. **7**

b) Explain G.722 technique used. **6**

OR

10. a) Explain Discrete wavelet transform. **6**

b) Explain two band subband coding and decoding system and its spectrum splitting properties with the help of diagram. **7**

11. a) Explain DPCM with Backward Adaptive Prediction. **7**

b) Explain block diagram of an MPEG-2 Advanced Audio Coding encoder. **7**

OR

12. a) Draw the block diagram of H-263 Video compression algorithm and explain each block in brief. **7**

b) What are the different compression issues in ATM networks. **7**

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