8E5008

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B. Tech. VIII Semester (Main/Back) Examination-2014
INFORMATION TECHNOLOGY# ⑧IT③
DATA COMPRESSION TECHNIQUES

Time : 3 Hours   Min. Passing Marks : 24   Maximum Marks : 80

Instruction to Candidates :

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

Unit–'I'

1. (a) Write down the application of lossless compression. [8]
   (b) Explain Kraft-McMillan inequality in detail. [8]

OR

1. (a) Explain Haffman coding. Also write down its Encoding Algorithm. [8]
   (b) What is Rice code? Explain in detail. [8]

Unit–'II'

2. (a) Explain Arithmetic loding in detail. Also write down its algorithm. [8]
   (b) Write down the differences between LZ77 and LZ78. [8]

OR

2. (a) Define move-to-front encoding. [8]
   (b) Explain facsimile encoding. also define its types. [8]

Unit–'III'

3. (a) Explain rate distortion theory and its uses in detail. [8]
   (b) Give the difference between uniform quantization and non-uniform quantization. [8]

OR

3. (a) Give the difference between vector quantization and scalar quantization. [8]
   (b) Explain lattice algorithm and give the advantage of lattice algorithm. [8]

Unit–'IV'

4. (a) Define the steps required in DPCM compression of images and video signals. [8]
   (b) Design the CVSD decoder block diagram. [8]

OR

4. (a) Define the performance measurement of delta modulation. [8]
   (b) Explain in detail
   (i) z-transform
   (ii) DCT [8]

Unit–'V'

5. (a) List out the applications used in wavelet based compression. [8]
   (b) Discuss various MPEG standards. [8]

OR

5. (a) Explain the basic sub band coding algorithm. [8]
   (b) What is filter? write out some filters used in sub band coding? [8]