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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **ET453B - (Elective II)-Multimedia Communication**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

- 1) Solve any three subquestion
 - a) What are the different H.261 video encoding formats? [6]
 - b) Define predictor coefficient with the help of differential pulse code modulation principle. [6]
 - c) An analog signal has a dynamic range of 40 dB. Determine the magnitude of the quantization noise, relative to the minimum signal amplitude if the quantizer uses
 - i. 6 bits [3]
 - ii. 10 bits [3]
 - d) What are the different types of text that are used to produce pages of the documents. Explain any one. [6]
- 2) Solve any three subquestion
 - a) Describe the steps for static Huffman coding in text compression. [6]
 - b) Explain the meaning of the following terms relating to compression-
 - i. source encoders [1]
 - ii. destination decoders [1]
 - iii. lossless compression [1]
 - iv. lossy compression [1]
 - v. entropy encoding [1]
 - vi. source encoding [1]
 - c) Derive the time to transmit the following digitized image at both 64 kbps and 105 Mbps
 - i. $640 \times 480 \times 8$ VGA compatible image [3]
 - ii. a $1024 \times 768 \times 24$ SVGA compatible image [3]
 - d) State and explain the application (QoS) quality of service parameters that relate to the network. [6]
- 3) Solve any three subquestions
 - a) Discuss the multipoint conferencing modes of operation with respect to
 - i. centralized [2]
 - ii. decentralized [2]
 - iii. hybrid [2]
 - b) Describe (motion picture expert group) MPEG-I video bitstream structure [6]
 - c) A digitized video is to be compressed using the MPEG-I standard. Assuming a frame sequence of IBBPBBPBBPBI.....and an average compression ratio of 10:1 (I) 20:1 (P) and 50:1 (B), Derive the average bit rate that is generated by the encoder for both the NTSC and PAL digitization formats. [6]
 - d) What are the different communication modes used in multimedia communication [6]
- 4) Solve
 - a) With the aid of a diagram explain the principle of operation of a circuit mode network and a packet mode network. [6]

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