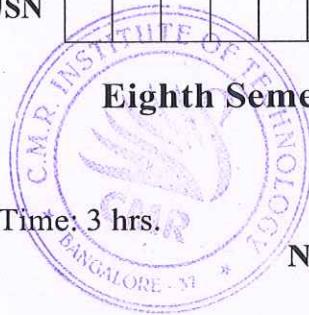


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10EC/TE841



Time: 3 hrs.

Max. Marks: 100

Eighth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Multimedia Communications

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART – A

1. a. List the five basic types of communication network that are used to provide multimedia services. Explain with a neat diagram: i) Telephone network ii) Integrated digital services network. (10 Marks)
- b. Explain the principle of operation of packet switched network. (07 Marks)
- c. Derive the maximum block size that should be used over a channel which has mean BER probability of 10^{-4} if the probability of a block containing an error and hence being discarded is to be 10^{-1} . (03 Marks)

2. a. Explain the principle of operation of a PCM speech CODEC with a neat diagram. (10 Marks)
- b. Explain briefly about the concept of interlaced scanning. (06 Marks)
- c. An analog signal has a dynamic range of 40dB. Find the magnitude of the quantization noise relative to the minimum signal amplitude if the quantizer uses i) 5 bits ii) 10 bits. (04 Marks)

3. a. Message comprising seven different characters, A through G, are to be transmitted over a data link. Analysis has shown that the relative frequency of occurrence of each character is A 0.10, B 0.25, C 0.05, D 0.32, E 0.01, F 0.07, G 0.2.
 - i) Derive the entropy of the messages.
 - ii) Use static Huffman coding to derive a suitable set of codeword.
 - iii) Derive the average number of bits per codeword. (10 Marks)
- b. With a neat block diagram, explain JPEG encoder. (10 Marks)

4. a. Explain LPC encoder and decoder with a neat diagram. (10 Marks)
- b. With neat diagram, explain video compression principles. (10 Marks)

PART – B

5. a. Explain CSMA/CD and principle of operation of token ring. (10 Marks)
- b. Explain in detail, with diagrams, LAN protocols and protocol framework. (10 Marks)

6. a. Explain fragmentation and reassembly in the internet with an example. (10 Marks)
- b. Explain datagram format of IPV6. (10 Marks)

7. a. Explain the ATM cell formats. (10 Marks)
- b. Explain classical IP over ATM LAN. (10 Marks)

8. a. Explain TCP socket interface. How the socket primitives are used to carry out active open and passive open connections, with the help of diagram. (10 Marks)
- b. Explain RTP and RTCP. (10 Marks)

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