CBCS SCHEME

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21EC745

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2025
Multimedia Communication

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define multimedia. Explain
(i) Telephone network.
(ii) Integrated service digital network. **(10 Marks)**

b. Describe network QoS associated with circuit switched and packet switched network. **(10 Marks)**

OR

2 a. Discuss the multimedia applications. **(10 Marks)**

b. Illustrate simplex, duplex, broadcast and multicast operational modes of communication with neat diagram. **(10 Marks)**

Module-2

3 a. Outline the signal encoding and decoding principles with a necessary diagram. **(10 Marks)**

b. Discuss the different types of image representation. **(10 Marks)**

OR

4 a. Discuss the different types of text representation. **(10 Marks)**

b. Derive the bit rate and memory requirements to store each frame that result from digitization of 525 line system assuming a 4 : 2 : 2 format. Also find total memory required to store a 1.5 hours movie / video. **(10 Marks)**

Module-3

5 a. Illustrate the static Huffman coding with an example. **(10 Marks)**

b. Describe the basic mode of operation of GIF. **(10 Marks)**

OR

6 a. Discuss each stage of JPEG Encoder with neat diagram. **(10 Marks)**

b. Outline the following terms :
(i) Differential encoding
(ii) Transform encoding. **(10 Marks)**

Module-4

7 a. Discuss the principles of differential pulse code modulation with block diagram. **(10 Marks)**

b. Explain H.261 video encoder principles with neat diagram. **(10 Marks)**

OR

8 a. Describe how better sound quality can be obtained using subband coding ADPCM with the help of block diagram and signal encoder and decoder. **(10 Marks)**

b. A digitized video is to be compressed using MPEG – 1 standard. Assuming frame sequence of IBBPBBPBBPBBI.. and average compression ratio of 10 : 1 (I), 20 : 1 (P) and 50 : 1 (B), derive average bit error rate that is generated by encoder for both NTSC and PAL formats. **(10 Marks)**

Module-5

9 a. Describe the devices commonly used in LAN. **(10 Marks)**

b. Discuss FDDI networking component with a necessary diagram. **(10 Marks)**

OR

10 a. Illustrate the LAN protocol sublayers with the aid of the protocol frame work. **(10 Marks)**

b. Discuss Gigabit Ethernet repeater hub. **(10 Marks)**

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