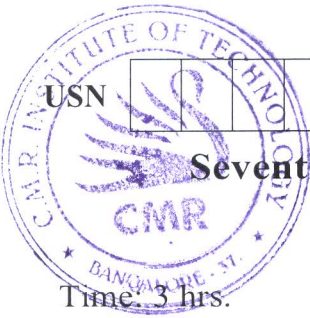


CBCS SCHEME

15EC741



Seventh Semester B.E. Degree Examination, June/July 2024 Multimedia Communication

Time: 3 hrs.

Max. Marks: 80

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 (ISDN) in detail with figures. (06 Marks)
- b. Explain with neat diagram multipoint conferencing modes and type of conferencing. (06 Marks)
- c. Determine the propagation delay associated with the following communication channels :
 - i) A connection through a private telephone network of 1km.
 - ii) A connection through PSTN of 200km
 - iii) A connection over a satellite channel of 50,000km. (04 Marks)

OR

- 2 a. Explain the working principle of circuit mode and packet mode of operation of multimedia network. (06 Marks)
- b. Explain multimedia applications. (06 Marks)
- c. Define the following: i) Text ii) Image iii) Audio iv) Video. (04 Marks)

Module-2

- 3 a. Explain Raster – Scan Operation associated with TV/Computer monitor. (08 Marks)
- b. Derive the time to transmit following digitized images at 64 Kbps and 1.5 Mbps ,
640 × 480 × 8, VGA compatible image, 1024 × 768 × 24 SVGA compatible image. (06 Marks)
- c. Define Aspect ratio of display screen. (02 Marks)

OR

- 4 a. With a neat circuit components and its associated waveform, explain signal encoder design. (08 Marks)
- b. With the aid of diagram, describe following digitization formats :
 - i) 4 : 2 : 2 ii) SIF iii) CIF. (08 Marks)

Module-3

- 5 a. A message and its probability of occurrence of each character is of follows :
A and B = 0.25, C and D = 0.14, E, F, G and H = 0.055.
 - i) Find the minimum average number of bits per character using Shannon's formula.
 - ii) Construct Huffman code tree and derive a code word set. (08 Marks)
- b. Define distributed multimedia system with neat block schematic and also highlight its features. (08 Marks)

OR

- 6 a. Discuss Multimedia Operating System with respect to CPU management , Memory management , I/O management and File system management. (08 Marks)
- b. With the aid of neat block diagram explain JPEG encoder. (08 Marks)

Module-4

- 7 a. Explain DPCM encoder/decoder with a neat diagram. (08 Marks)
b. What are the video compression principles, explain with example frame sequences :
i) I and P frames ii) I – P – B frames iii) PB frames. (08 Marks)

OR

- 8 a. Explain Linear predictive coding signal encoder and decoder with neat schematic. (08 Marks)
b. Explain H.261 macro block encoding format. (08 Marks)

Module-5

- 9 a. Explain packet audio and video in the network environment. (06 Marks)
b. Explain video transport across generic network. (06 Marks)
c. Write a short note on analytic mode based approach. (04 Marks)

OR

- 10 a. Explain packet video in detail. (06 Marks)
b. Explain error resilient video coding. (06 Marks)
c. Write a short note on Error losses ATM. (04 Marks)

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