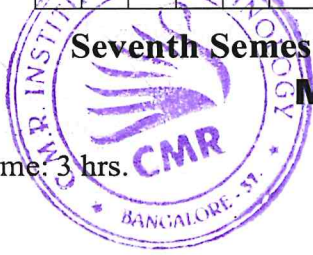


CBCS SCHEME

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17EC741



Seventh Semester B.E. Degree Examination, July/August 2021

Multimedia Communication

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Illustrate broadcast television networks with relevant diagram. (06 Marks)
b. Explain interactive application over the internet with neat diagram. (08 Marks)
c. Explain the QOS parameters associated with circuit switched networks. (06 Marks)
- 2 a. Write notes on: (i) Movie on demand (ii) Near movie on demand (06 Marks)
b. Illustrate connection oriented packet switched network with relevant diagram. (08 Marks)
c. A packet switched network with a worst case jitter of 10 ms. Determine the minimum amount of memory that is required at the destination and a suitable packet size for each of the following input bit rates (i) 64 kbps (ii) 256 kbps (iii) 1.5 Mbps (06 Marks)
- 3 a. Design a basic signal encoder with circuit components and associated waveforms. (08 Marks)
b. Discuss the following with relevant diagrams: (i) Additive mixing (ii) Subtractive mixing (04 Marks)
c. Explain the following HDTV formats with bit rates : (i) SIF (ii) QCIF (08 Marks)
- 4 a. Write a note on CD quality audio. (04 Marks)
b. Derive the bit rate and memory requirements to store each frame that result from the digitization of both a 525 line and a 625 line system assuming a 4:2:2 format. Also find the total memory required to store a 2 hour movie/video. (08 Marks)
c. Explain the basic principle of PCM signal encoder/decoder with relevant waveforms. (08 Marks)
- 5 a. Explain the following image compression techniques: (i) GIF (ii) TIFF (06 Marks)
b. Write a note on Resource Management of DMS. (04 Marks)
c. Explain the necessary steps involved in JPEG encoder with neat diagram. (10 Marks)
- 6 a. Explain the following with respect to multimedia operating systems:
(i) CPU management (ii) Memory Management (iii) IO Management (06 Marks)
b. Illustrate arithmetic coding for the encoding of the string [went.]. Assume the probability of a string of characters $e = 0.3$, $n = 0.3$, $t = 0.2$, $w = 0.1$ and $\cdot = 0.1$. (08 Marks)
c. Explain RSVP architecture with neat diagram. (06 Marks)
- 7 a. Explain ADPCM with neat diagram. (08 Marks)
b. Illustrate B-frame encoding procedure with relevant diagram. (08 Marks)
c. Write a note on H.263. (04 Marks)

- 8 a. Explain MPEG-1 video bit stream structure with necessary composition and frame format. (08 Marks)
b. Explain LPC signal encoder/decoder with neat diagram. (08 Marks)
c. Explain scene composition used in MPEG-4. (04 Marks)
- 9 a. Illustrate basic reconstruction approaches used in packet voice with advantages and disadvantages. (06 Marks)
b. Write a note on error resilient encoding. (04 Marks)
c. Explain different multiplexing schemes used in ATM networks. (10 Marks)
- 10 a. Explain scalable rate control with neat block diagram. (10 Marks)
b. Explain the concept of layered video coding with relevant diagrams. (06 Marks)
c. Write a note on packet video. (04 Marks)