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.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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 · = 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)**

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