

## C6-R4: MULTIMEDIA SYSTEMS

### NOTE:

1. Answer question 1 and any FOUR from questions 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.
  - a) Why visual rhetoric is important in developing multimedia applications?
  - b) What are the functions of region element of SMIL? Give example.
  - c) What are the three layers of IEEE 1394?
  - d) What are the components in the basic architecture of a distributed multimedia system?
  - e) How RTCP and RTSP are different?
  - f) What is RAID technology and what advantages does it offer as a medium for storage and delivery of large data?
  - g) What is temporal redundancy in video encoding?

(7x4)

2.
  - a) Write the steps of mp3 encoding algorithm. Can mp3 support variable bitrate?
  - b) Video-phony and video-conferencing are two different techniques. Justify.
  - c) Describe the advantages of HDTV system over the other Television system.

(7+5+6)

3.
  - a) How Steady State CPU Time is allocated for multimedia resource handling?
  - b) Write the main elements of the MPEG-7 standard.
  - c) Illustrate the quantization technique in JPEG compression scheme explaining its' importance.

(8+5+5)

4.
  - a) What is the difference between inter-object and intra-object synchronization.
  - b) Construct a Huffman binary tree using the given a set of **symbols** with a list of relative **probabilities** of occurrence within a message.

m0	m1	m2	m3	m4
0.10	0.36	0.15	0.2	0.19

- c) Why is multicasting relevant to multimedia traffic? At what level in the networking stack would it be appropriate to facilitate multicasting for time sensitive traffic and why?

(4+8+6)

5.
  - a) What is QoS for multimedia delivery? Illustrate the QoS Framework for the same.
  - b) Why is TCP not suitable for real-time traffic? How does RTP overcome the limitation of TCP for real-time traffic? Also comment on quality of service guarantees in RTP.

([3+7]+8)

**6.**

- a) Why should you use an authoring system? What are the differences between Authoring Vs Programming? What are the different authoring paradigms?
- b) Why MMX processor is efficient? Write two other properties of MMX.

**([4+5+4]+5)**

**7.**

- a) Give the block diagram of Conceptual Model of a VRML Browser. Write the header syntax of a VRML file.
- b) Distinguish between the artisan metaphor and factory metaphor as a multimedia production metaphor.

**(10+8)**