

C6-R4 : MULTIMEDIA SYSTEMS**NOTE :**

1. Answer question 1 and any FOUR questions from 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) Lossy and Lossless are two of the important compression techniques. Discuss the pros and cons of both of the techniques.
 (b) What do you understand by Virtual Reality? Explain it in brief.
 (c) Explain the basic MIDI message structure.
 (d) Why we need MP3 compression technique and what are its disadvantages?
 (e) How one can differentiate among Multimedia, Hypermedia, and Hypertext?
 (f) Explain the content based image retrieval and its advantages over keywords/ metadata based image search.
 (g) Storage requirements is one of the major consideration for Multimedia Systems. What are the major factors one should consider while allocating storage for such systems? (7x4)

2. (a) Define Multimedia databases. What are the challenges faced for it?
 (b) What do you understand by SMIL and SMIL documents? Give the list of some of the SMIL players. (9+9)

3. (a) Consider the following block of frequency domain values from a video frame arising during MPEG compression:

190	200	5	135
1	7	125	205
12	70	72	195
75	68	140	132

Apply successively to this block:

 - (i) MPEG quantization using a constant quantitation value of 64,
 - (ii) Zig-zag scanning, and
 - (iii) Run length encoding
 (b) What is advantages of using a video server and what should be the desirable property of a video server? (9+9)

4. (a) What are the different kinds of frames that have to be processed while compressing a video using MPEG-2 encoding? Explain each of them.
 (b) What are different QoS parameters of a Multimedia System? Discuss any four parameters. (9+9)

5. (a) Explain VRML scripting with the help of a suitable example.
(b) What is multimedia file systems and why do we need it?
(c) Differentiate between MPEG-2 and MPEG-4? **(6+6+6)**
6. (a) Discuss the following transport protocols used with conferencing.
(i) TCP
(ii) UDP
(iii) RTP
(b) Explain the Huffman coding and show one can use it to encode the set of tokens: "BABACACADADABBCBABEBEDDABEEEEBB". How is this message transmitted and how many bits are needed to transfer this coded message? **(9+9)**
7. (a) What does IEEE 1394 interface mean? What are different features supported by it and how it is different from USB?
(b) Discuss the following resource-scheduling techniques with real time consideration:
(i) Static Priority Scheduling,
(ii) Earliest Deadline First
(iii) Hierarchical Start-Time Fair Scheduling **(9+9)**

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