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)   What is multimedia document architecture? Write the current standard architecture.
b)   A digitized video is to be compressed using MPEG-1 standard. Assuming a frame sequence of IBBPBBPBBPBBI… and average compression ratios of 10:1(I), 20:1(P), and 50:1(B), derive the average bit rate that is generated by the encoder for the PAL digitization format.
c)   Why interframe correlation is important in video encoding?
d)   How is authoring system different from authoring paradigm?
e)   What are the software requirements for a virtual reality system?
f)   What is visual rhetoric?
g)   Briefly illustrate the functions of ADDIE model of CBT development life cycle.

(7x4)

2.
a)   Describe briefly the tools used for multimedia development.
b)   Derive the bit rate and the memory requirements to store each frame that result from the digitization of a 525-line system assuming a 4:2:2 format.
c)   Explain QoS is important for multimedia communication?

(8+6+4)

3.
a)   What is content based coding? Which MPEG standard support that and how?
b)   Briefly discuss the mp3 audio encoding scheme.
c)   Illustrate with block diagram the JPEG encoding and decoding technique.

(8+5+5)

4.
a)   Authoring process is categorized in to several stages. Explain the functioning of those major stages.
b)   Illustrate the quantization technique in JPEG compression scheme explaining its' importance.

(12+6)

5.
a)   What is content based coding? Which MPEG standard support that and how?
b)   How Luma-Chroma principle is crucial for video encoding?
c)   Why visual rhetoric is important in developing multimedia applications?

(8+5+5)

6.
a)   Illustrate with example the use and purpose of VRML
b)   Write down the characteristics of Multimedia Databases.
c)   Describe at least three Virtual reality applications.

(7+5+6)

7.
a)   How WaveTable synthesizer is different from FM synthesizer. How MIDI file is different from digital audio?
b)   Describe the different components in the MIDI protocol in details.

(8+10)