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 inter-frame correlation is important in video encoding?
b) Write the names, similarities and differences between two types of object synchronization.
c) Why mp4 is important in multimedia coding?
d) What are the major factors that are taken into account when considering storage requirement for multimedia system.
e) What are the problems of putting an animation on the web?
f) What is the difference between block media and compression media?
g) Explain the principle of LZ compression algorithm.

(7x4)

2.
a) State the issues of standardization of multimedia databases. Write the notable differences between relational and object oriented model of multimedia databases with examples.
b) What is the role of color models in image compressions?
c) Which MPEG version is known as "Multimedia Content Description Interface"? Illustrate some essential characteristics of that MPEG framework.

(7+5+6)

3.
a) How entropy encoding is different from source encoding?
b) Explain how MIDI files are created and also explain their role in multimedia application.
c) How I, P and B-frames technique help in the MPEG video compression technique?

(5+6+7)

4.
a) What is RAID technology and what advantages does it offer as a medium for the storage and delivery of large data? Briefly explain the eight levels of RAID functionality.
b) What are the components in the basic architecture of a distributed multimedia system?
c) How RTP, RTCP and RTSP are different?

(8+4+6)

5.
a) Briefly mention the importance of necessary peripheral devices for creating virtual reality.
b) Illustrate with block diagram the JPEG encoding and decoding technique.
c) Write the technique of processing WAV file by a standard sound card.

(8+6+4)

6.
a) How authoring system and authoring paradigm is different? Is it possible to develop all parts of multimedia applications inside an authoring system? Justify.
b) Multimedia production process consists of different strategies in the planning and project management. Illustrate such strategies.

([4+5]+9)

7.
a) Write down the essential typical features of a modeling language for virtual reality. Illustrate the benefits of narrative virtual environment.
b) Illustrate the essential properties of asynchronous transfer mode.

(10+8)