C11-R3: MULTIMEDIA TECHNOLOGY AND VIRTUAL REALITY

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) What is DVI?

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) Write the objectives of MPEG-7.

d) What is Transform Coding?

e) What are the software requirements for a virtual reality system?

f) Differentiate between hypertext and hypermedia.

g) Briefly illustrate the functions of ADDIE model of multimedia development life cycle.

(7x4)

2.

a) What are the different planning and project management strategies in a multimedia production? Describe them briefly.

b) Explain briefly three general forms of Virtual Reality (VR).

(12+6)

3.

a) What is content based coding? Which MPEG standard is used to support the content based coding and how?

b) Why MP4 is important in multimedia coding?

c) Illustrate with block diagram the JPEG encoding and decoding technique.

(8+5+5)

4.

a) Write at least three features of a MMX.

b) Describe the process of creating a multimedia presentation.

c) Describe major steps in the authoring process.

(5+4+9)

5.

a) How is head-mounted display technology used in Virtual Reality? Explain.

b) Write a comparative study between videophony and videoconferencing.

c) What is MHEG and what is its target domain?

(6+8+4)

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 is WaveTable synthesizer different from FM synthesizer and how is MIDI file different from digital audio? Describe the different components in the MIDI protocol.

b) Why is Filter used in an image? Briefly describe the architecture of a video frame grabber.

(8+10)