otal No of Questions: [12] **SEAT NO. :** [ ]

[Total No. of Pages : 2]

May-14

SYMCA-Engg.(2008)(610905)

Principles of Multimedia

(Semester - I)

Time: 3 Hours *Max. Marks : 70*

Instructions to the candidates:

1) *Answers to the two sections should be written in separate answer books.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right side indicate full marks.*
4) *Assume Suitable data if necessary*

SECTION I

1 a) Explain the characteristics of Multimedia Presentation with example. [8]
b) Discuss multimedia building blocks. [4]

OR

2 a) Explain architecture of MMDBS. [8]
b) What is multimedia document and document architecture? [4]

3 a) Explain any two Lossless compression techniques [7]
b) What is Statistical Redundancy and Psycho-visual Redundancy? [4]

OR

4 a) An image with dimensions 640 x 480 and color depth of 16bits is to be transmitted along a 56kbps line from a web server. Calculate the amount of time it would take before the entire image is visible on the screen. [7]
b) Give in detail the file format of GIF. [4]

5 a) What are synthesizers? Give types of synthesizers and characteristics of a synthesizer. [6]
b) The Audio-CD format requires sound to be digitized using sampling rate of 44.1 KHz and a bit-depth of 16-bits, in stereo mode. If 74 minutes of the digitized audio can be stored in a single CD, calculate the CD storage capacity. [6]

OR

6 a) Explain WAV file format in detail. [6]
b) Give fundamental physical characteristics of a Sound Wave. Give the audible frequency range of humans? What is 'pitch'? [6]

SECTION II

7 a) Explain Huffman encoding with an example. [7]
b) Compress the string 'ABABBABCABABBA' using LZW encoding technique. [4]

OR

8 a) Explain the Television Broadcasting Standards: NTSC, PAL, and SECAM. [6]
b) What is Luminance and Chrominance component of color? Why Chroma sub-sampling is done? Explain 4:2:2 sub-sampling scheme with suitable diagram. [5]

9) a) What is virtual reality? Explain different forms of virtual reality. [7]

b) What is 3D sound system? Explain Inter-aural Intensity Difference and Inter-aural Time Difference. [5]

OR

10) a) Explain virtual Reality chair used in VR-applications. [7]

b) Explain features of VRML with example. [5]

11) a) Discuss in brief any 8 principles of animation. [8]

b) Explain any two animation techniques. [4]

OR

12) a) Discuss 'Animation on the Web'. Explain Client-Pull and Server-Push animation. [8]

b) What is Z-Buffer Algorithm? What are Aliasing Effect and Temporal Aliasing Effect? How are they handled? [4]