Paper Code: EIT-082 **Roll No.**

B.Tech.
(SEM VIII) EVEN SEMESTER EXAMINATION, 2015-16
MULTIMEDIA SYSTEMS

[Time: **3 Hours]** [Maximum Marks: **100]**

Note: Attempt all question. All question carry equal marks.

Q.1. Attempt any four part of the following:- **[5x4=20]**

(a) What is multimedia? What is different element of Multimedia system?
(b) What do you understand by multimedia information? How multimedia effects to businesses.
(c) What are different roles of multimedia in E-Commerce?
(d) Discuss the application of multimedia system.
(e) Describe different stages in multimedia application development.
(f) Discus authoring tools used in multimedia System.

Q.2. Attempt any four part of the following:- **[5x4=20]**

(a) How much memory required storing 15minuts a television serial representing 1024x780 resolution picture qualities with 24 bit color depth and 36 frames per second with 64 Byte per frame audio signal?
(b) Differentiate between JPEG and MIDI.
(c) What is advantage and disadvantage of different audio/video format in windows?
(d) Discuss the Architecture of audio data and video data.
(e) What is composite data format?
(f) Discuss which type of audio/video data is suitable for video conference.

Q.3. Attempt any two parts of the following. **[10x 2=20]**

(a) What is entropy encoding? Discuss different entropy encoding method with example.

(b) A statistical encoding algorithm is being considered for the transmission of a large number of long text files over a public network. Analysis of the file content has shown that each file compress only the six different characters M, F, Y, N, O, and L each of which occurs with a relative frequency of occurrences of **0.25, 0.25, 0.125, 0.125, 0.125** and **0.125** respectively. Find the following
   i. Find the set of code word using hamming code algorithm.
   ii. Average no. of bits per code word.
   iii. Entropy of source

(c) Discuss LZ77 encoding and decoding algorithm. Trace the LZW encoding algorithm on AAABAABBBB and then trace LZW decoding algorithm on LZW encoding result.

Q.4. Attempt any two parts of the following:- **[10x 2=20]**

(a) Discuss the application of compressed digital audio. What are the key elements of digital audio compression techniques discuss in brief?

(b) Explain how a frequency spectrum diagram can be used to represent function **f(t)= 0.5 +sin(580 *pi* t) +sin(1760 *pi*t).**

(c) Explain briefly following terms:
   i. Sampling
   ii. Audio encoder/decoder with block diagram
   iii. Quantization

Q.5. Attempt any two parts of the following:- **[10x 2=20]**

(a) Explain general approaches of various popular lossy image compression techniques such as progressive image compression and transform.

(b) Explain following:

   i. Explain how RGB color values, When R=G=B can be used to represent shades of gray.
   ii. Construct a Reflected Gray Code for decimal values 0, 1, 2…, 15.

(c) Explain briefly the concepts of spatial redundancy and temporal redundancy in video compression.