B.E. INFORMATION TECHNOLOGY Examination 2017 EX/IT/T/422/2017

(4^{th} year,2^{nd} semester)

Time: Three hours Full Marks : 100

MULTIMEDIA TECH

PART-I

1. Attempt any three (3) questions: (3*5=15)
   (a) What do you mean by I-frame,B-frame, and P-frame in the context of video compression?
   (b) Define color Look-up tables(LUT).
   (c) Explain about Graphics interchange format.
   (d) What are the different types of color models? What are additive and subtractive color models?

2. Attempt all questions: (10*1=10)
   (a) An image scanner can be used for storing-
      (i) Text material (ii) Engineering drawings
      (iii) Pictures (iv) All of these
   (b) Which of the following are interactive?
      (i) Radio broadcast (ii) A talk shown on TV
      (ii) A Newspaper (iv) A Computer game
   (c) MPEG stands for
      (i) Moving picture expert group
      (ii) Moving picture Engineers group
      (iii) Movie pictures Expert group
      (iv) Motion picture Expert group
   (d) Which of the following attributes of text box control allow to limit the maximum character?
      (i) Size (ii) Len (iii) Maxlength (iv) All of these

   (e) A video sequence is usually captured by a video recorder at the rate of
      (i) 1frame/sec (ii) 2frames/sec (iii)25 frames/sec (iv) None
   (f) The quality of the picture produced by a laser printer depends on
      (i) It's resolution (ii) Size of the picture file
      (iii) The internal memory (iv) The resolution of the monitor
   (g) The resolution of a typical monitor is about:
      (i) 10dpi (ii) 60dpi (iii) 200dpi (iv)300dpi
   (h) To store good quality sound and audio signal in a multimedia PC is sampled at a rate of
      (i) 44.1HZ (ii)4.41KHZ (iii) 44.1KHZ (iv) 4.41HZ
   (I) The format used for storing digital audio in the multimedia application is
      (i) JPEG (ii) TIFF (iii) WAV (iv) BMP
   (J) To provide comfort to the computer user, the graphics screen is refreshed at the rate of
      (i) 5 frames per sec (ii) 25 frames per sec
      (iii) 60 frames per sec (iv) 200 frames per sec

PART -II

Attempt any five (5) questions: (5*15=75)

3. (i) Describe the steps of JPEG compression with full explanation.
   (ii) Compare and contrast JPEG and MPEG
   (iii) A series of messages is to be transferred between two computers. The message comprises the character A to E. Analysis has shown that the probability of each character is as follows:
   A = 0.35 B = 0.17 C = 0.17 D = 0.16 E = 0.15
   Using the Huffman coding derive the Huffman tree and also calculate the code word set.

   5+5+5 =15

4. (i) Write the node structure of K-d tree.
   (ii) Write the algorithm that how to insert and delete an element in case of R-tree.

   5+10 = 15

5. Write short notes on any three of the following
   (a) Encryption
   (b) Inter object synchronization
   (c) MPEG
   (d) Quad tree

   5*3=15

6. (i) What do you mean by animation? Differentiate between video and animation.
   (ii) Compare bitmaps with vector drawn graphics.
   (iii) Explain the different image file formats.

   5+5+5 = 15

7. (i) Briefly describe the multimedia synchronization model.
   (ii) What is multimedia? Illustrate the key properties of a multimedia system.
   (iii) Describe the application of Lip synchronization.

   5+5+5 = 15

8. (i) Describe the transmission of multimedia information.
   (ii) What are the challenges in multimedia.
   (iii) Write down about the Multimedia system.

   5+5+5 = 15