M.TECH. PRINTING ENGINEERING AND GRAPHIC COMMUNICATION EXAM 2018
FIRST YEAR FIRST SEMESTER
MULTIMEDIA SYSTEMS & COMMUNICATION

Time-3 hrs.

Full Marks: 100

Answer any **five** of the following questions:

1. a) Discuss the MPEG-4 coding principle with the help of neat diagram.

   b) Derive Huffman Code Tree: {Character -A B C D E F} {Frequency 5 9 12 13 16 45} with algorithm.

   c) Briefly discuss about the comparison of Lossy and Lossless Compression.

   [8+7+5=20]

2. a) Consider a raster system with the resolution of 1024 x 768 pixels and the color palette calls for 65,536 colors. What is the minimum amount of video RAM that the computer must have to support the above-mentioned resolution and number of colors?

   b) Write the difference between vector and bitmap graphics?

   c) What do you mean by an aspect ratio? Find out the aspect ratio of the raster system using 8 x 10 inches screen and 100 pixel/inch.

   d) How much time is spent scanning across each row of pixels during screen refresh on a raster system with resolution of 1280 X 1024 and a refresh rate of 60 frames per second?

   [7+4+4+5=20]

3. Discuss about :
   a. Quantization
   b. Chroma sub-sampling
   c. Midi file
   d. Dithering

   [5+5+5+5=20]

4. a) Write down the steps of Bresenham's circle drawing algorithm.

   b) Given coordinate of two points A(18, 10) and B(25, 18). The task to find all the intermediate points required for drawing line AB on the computer screen of pixels. Note that every pixel has integer coordinates.

   c) Write down the basic steps of image processing.   [6+8+6=20]

5. Mention different types of light that may be used in a 3D scene with their essential properties.
   Distinguish fall off, drop off and spread of lights in a 3D scene.
   Write down the basic principle of video camera.

   [8+5+6=20]

6. What are the various media that are normally incorporated in multimedia presentation?
   Give examples how information may be conveyed through each of these media components.
   Distinguish between: a) JPEG and GIF b) video and animation.
   Discuss the different types of software required for implementing multimedia production.
   Describe some of the important criteria required for promoting multimedia technology

   [5+6+ 3+6=20]

7. What is meant by key framing and tweening? Discuss in brief about major text file formats.
   List the advantage and disadvantages of using LCD displays over CRT displays.   [3+10+7=20]

8. Distinguish between: i) temporal and non-temporal ii) LAN,MAN and WAN iii) bandwidth and load of network .What is the difference between a peer to peer and client server network, mentioning the merits of each?   [10+10=20]