

**M.TECH. PRINTING ENGINEERING AND GRAPHIC COMMUNICATION FIRST YEAR
FIRST SEMESTER EXAM 2025
MULTIMEDIA SYSTEMS AND COMMUNICATION**

Answer any five of the following questions

1. Define multimedia and explain its key components. Discuss an overview of multimedia applications in various fields such as education, healthcare, and entertainment. How do these applications enhance user experiences and communication? Compare and contrast different multimedia file formats. How does the choice of file format impact the quality and size of multimedia content? Compare raster and vector graphics in multimedia. Provide examples of situations where each type is most suitable.

[3+(5+4)+5+3=20]

2. NTSC video has 525 lines per frame and 63.6 μ sec per line, with 20 lines per field of vertical retrace and 10.9 μ sec horizontal retrace.

[(5+5+4)+(3+3)=20]

(a) Where does the 63.6 μ sec come from?

(b) Which takes more time, horizontal retrace or vertical retrace? How much more time? Which do you think has less detectable flicker, PAL in Europe or NTSC in North America? Justify your answer. How many and what signals are used in S-video? What does S-video stand for? What are the most salient differences between ordinary TV and HDTV? What was the main impetus for the development of HDTV?

3. Discuss the MPEG audio compression. Briefly discuss about Lossy and Lossless compression. Compare between hypermedia and multimedia. Give example of multimedia software tool image, video and animation.

[10+4+3+3=20]

4. Briefly explain why we need to be able to have less than 24-bit color and why this makes for a problem. Generally, what do we need to do to adaptively transform 24-bit color values to 8-bit ones? Consider a raster system with the resolution of 1024 X 600 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 mention resolution and number of colors? Digital video uses *chroma subsampling*. What is the purpose of this? Why is it feasible? Briefly explain about features of authoring tools?

[3+3+3+7+4=20]

5. Write short note on : MIDI File , Follow through and overlapping action ,Anticipation, Key framing and tweening, LCD .

20

6. Loudness versus amplitude. Which is louder: a 1,000 Hz sound at 60 dB or a 100 Hz sound at 60 dB? Describe the significance of HTML lists. Compare ordered (), unordered (), and definition (<dl>) lists in HTML with suitable example. Provide an example of a basic HTML table structure using rowspan and colspan.

[3+4+2+5+6=20]

7. What is the main difference between the OSI and TCP/IP reference models? Define - HTTP, switching technology. Difference between LAN, MAN and WAN.

[5+5+5+5=20]