

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0513

Roll No.

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B.Tech.

(SEM. VII) ODD SEMESTER THEORY EXAMINATION

2010-11

MULTIMEDIA SYSTEM

Time : 3 Hours

Total Marks : 100

Note : (1) Attempt **all** questions.

(2) All questions carry equal marks.

(3) Be precise in your answers.

(4) No Second Answer book will be provided.

1. Attempt any **four** parts of the following : **(5×4=20)**

- (a) What are the different objects of the multimedia ?
- (b) Differentiate between video and animation.
- (c) List the characteristics of a good image authoring tools.
- (d) What aspects of the target audience would you take into consideration before designing a multimedia project ?
- (e) How CMYK color model differs from the RGB color model ?
- (f) Explain the following :
 - (i) Horizontal retrace and vertical retrace
 - (ii) Beam penetrations and shadow mask technique.

2. Attempt any **four** parts of the following (5×4=20)
- (a) Differentiate between FM Synthesizers and Wavetable synthesizers.
 - (b) How digital audio differs from MIDI ?
 - (c) What are settings required to record audio in windows environment ?
 - (d) For a movie with Frame rate of 25fps, resolution of 1000×800 and color depth of 16 bits calculate the following:
 - (i) The number of frames required for a movie of duration 5 Sec.
 - (ii) No. of vertical retraces if the CRT display has a refresh rate of 50 Hz.
 - (e) What are the different DVD formats used today for carrying multimedia contents ?
 - (f) What do you mean by streaming audio and what are its advantages ?

3. Attempt any **two** parts of the following : (10×2=20)

- (a) Construct the Huffman tree and generate the code for the following data :

Symbol	Frequency
A	30
B	30
C	15
D	15
E	10

- (b) Differentiate between the following :
- (i) Lossy and lossless compression
 - (ii) Static and dynamic compression.
- (c) Compress the text "BA\$BAB\$BABUBABAP" using LZ78 compression algorithm. Also show the output phrase and the dictionary obtained after this compression.

Attempt any **two** parts of the following : (10×2=20)

- (a) What is Pulse Code Modulation (PCM) ? And how it differs from Differential Pulse Code Modulation (DPCM) and Adaptive Differential Pulse Code Modulation (ADPCM) ?
- (b) What are sampling variables ? And how to reduce the quantization error ?
- (c) What are the characteristics of an audio that you will consider before choosing it for a web based application ?

5. Attempt any **four** parts of following : (5×4=20)

- (a) What is the role of Discrete Cosine Transformation in image compression ? Explain.
- (b) Differentiate between spatial and temporal redundancy.
- (c) What is zig zag scan and why it is used ?
- (d) What is key frame animation ? List any two animation tools that use key frame animation.
- (e) Explain at least two television broadcasting standards.
- (f) What is digital water marking technique and how it can be used in multimedia ?