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

PAPER ID : 0513 Roll No. | | | | | | | | | | |

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 : $(10 \times 2 = 20)$

(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 : $(5 \times 4 = 20)$

(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 ?