

Code: AT65

Subject: MULTIMEDIA SYSTEMS

**AMIETE – IT (NEW SCHEME)**

Time: 3 Hours

**JUNE 2012**

Max. Marks: 100

**PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.**

**NOTE: There are 9 Questions in all.**

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

**Q.1 Choose the correct or the best alternative in the following: (2×10)**

a. Hypermedia need not be constrained as

(A) Text based

(B) Graphics

(C) Images

(D) Sound & Video

b. In Graphics/Image Data types we mainly concentrate on file formats

(A) BMP & DIB

(B) PICT & PNG

(C) GIF & JPG

(D) TGA & TIFF

c. The Aspect ratio of NTSC Video

(A) 4:1

(B) 4:2

(C) 4:3

(D) 4:4

d. Digitization process includes

(A) Sampling

(B) Quantization.

(C) Sampling & Quantization

(D) Digitize the signals

e. The MIDI interface includes

(A) Synthesizer

(B) Sequencer

(C) Keyboard controller

(D) All

f. The multiplexing technologies includes stage

(A) FDM

(B) WDM

(C) TDM

(D) All

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- g. The ISDN defines types of channels
- (A) System channel (B) Network channel  
(C) B&D channel (D) Duplex channel
- h. The MPEG-1 layer does not support
- (A) I-pictures (B) B-picture  
(C) P-pictures (D) D-picture
- i. In video compression the default size of macro block for luminance images
- (A)  $N=16$  (B)  $N=8$   
(C)  $N=15$  (D)  $N=2p+1$
- j. Which type of methods are used to create and modify private properties of external code?
- (A) Class method (B) Run-time method  
(C) Accessor method (D) Get method

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**Answer any FIVE Questions out of EIGHT Questions.  
Each question carries 16 marks.**

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- Q.2** a. Distinguish between multimedia and Hypermedia. (2)
- b. Describe in detail the graphics image format including GIF file format, GIF screen descriptor and GIF color map. (12)
- c. What is the storage requirement of the 24 bit color image? (2)
- Q.3** a. Describe the color models YUV, YIQ and Y Cb Cr used to describe the colors in a picture. (10)
- b. Give the details of one electronic signal for one NTSC scan line. (6)
- Q.4** a. Define signal to noise ratio (SNR) as a quality of the audio signal. If the signal voltage is 1 volt and the noise voltage is 100 mv, calculate the signal to noise ratio. (6)
- b. Explain Huffman coding as a lossless compression algorithm. (10)
- Q.5** a. Describe briefly the Discrete Wavelet Transform (DWT) and Continuous Wavelet Transform (CWT). (8)

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- b. Draw and explain the block diagram of JPEG encoder. (5)
- Q.6** a. Compare interframe coding and intraframe coding in H.261 standard compression technique. (5)
- b. Distinguish between the functions of an encoder and decoder. (5)
- c. Describe the six hierarchical layers for the bit stream of an MPEG-1 video. (6)
- Q.7** a. Describe briefly the various features of motion picture compression standard MPEG-21. (8)
- b. Distinguish between channel vocoder and formant vocoder by briefly describing each one of them (8)
- Q.8** a. What are the various parameters used to describe the quality of service for multimedia data transmission? Describe each one of them briefly. (8)
- b. What are the issues associated with media on demand? Briefly describe each one of them (8)
- Q.9** a. Describe what do you understand by the word key frames as applied to animation and explain their details. (8)
- b. Write a brief note on magneto optical disks. (8)