

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

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|----------------|-------------------|
| (A) Text based | (B) Graphics |
| (C) Images | (D) Sound & Video |

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

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|---------------|----------------|
| (A) BMP & DIB | (B) PICT & PNG |
| (C) GIF & JPG | (D) TGA & TIFF |

c. The Aspect ratio of NTSC Video

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|---------|---------|
| (A) 4:1 | (B) 4:2 |
| (C) 4:3 | (D) 4:4 |

d. Digitization process includes

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|-----------------------------|--------------------------|
| (A) Sampling | (B) Quantization. |
| (C) Sampling & Quantization | (D) Digitize the signals |

e. The MIDI interface includes

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|-------------------------|---------------|
| (A) Synthesizer | (B) Sequencer |
| (C) Keyboard controller | (D) All |

f. The multiplexing technologies includes stage

- | | |
|---------|---------|
| (A) FDM | (B) WDM |
| (C) TDM | (D) All |

- 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

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

- 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)

Code: AT65**Subject: MULTIMEDIA SYSTEMS**

- b. Draw and explain the block diagram of JPEG encoder. (8)
- 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)