

AMIETE – IT

Time: 3 Hours

DECEMBER 2013

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. Which of the following is NOT a video file extension?

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|---------|---------|
| (A) MP4 | (B) AVI |
| (C) JPG | (D) MOV |

b. A broadcast/NTSC video requires how many FPS for it to play smoothly?

- | | |
|--------|-------------------|
| (A) 15 | (B) 30 |
| (C) 45 | (D) None of these |

c. MP3 as an extension of a _____ file.

- | | |
|-----------|------------------|
| (A) Sound | (B) Music |
| (C) Audio | (D) All of these |

d. If you want to enlarge/ reduce an image size which differs extensively from its original size without loss in its quality, that image should be in which format?

- | | |
|------------------|-------------------|
| (A) Vector | (B) Raster |
| (C) Encapsulated | (D) None of these |

e. What is another name for 2D animation?

- | | |
|--------------------|---------------------------|
| (A) Clay animation | (B) Computer animation |
| (C) Cell animation | (D) Stop-motion animation |

f. What method of animation creates the in- between frames when you create the start and end points of the animation?

- | | |
|-------------------|-------------------|
| (A) Action script | (B) Tweening |
| (C) Authoring | (D) None of these |

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Subject: Multimedia Systems

- g. A smaller version of an image is called a _____.
- (A) Clipart (B) Bitmap
(C) Portable network graphic (D) Thumbnail
- h. The main objective of _____ standard is for higher quality video at a bitrate of more than 4Mbps. It was initially developed as a standard for digital broadcast TV.
- (A) MPEG-1 (B) MPEG-2
(C) MPEG-7 (D) None of these
- i. _____ is a standard for video encoder /decoder for audiovisual services at PX 64 kbps.
- (A) H.242 (B) H.230
(C) H.261 (D) H.320
- j. ATM adaptation layer (AAL) converts_____.
- (A) User data into ATM data streams
(B) ATM data streams into user data
(C) None of these
(D) Both (A) and (B)

Answer any FIVE Questions out of EIGHT Questions.

Each question carries 16 marks.

- Q.2** a. What is meant by the terms Multimedia and Hypermedia? Distinguish between these two concepts. (4)
- b. Briefly explain why we need to have less than 24-bit colour representations (typically down to 8-bit) and why this is sometimes a problem? Give one example where 8-bit colour representation have an advantage in terms of image/video processing? (4)
- c. What is VRML? Explain. (8)
- Q.3** a. List three distinct models of colour used in Multimedia. Explain why there are a number of different colour models exploited in multimedia data formats. (5)
- b. What are the advantages and disadvantages of digital representation for video? (5)
- c. Compare between various standards for the transmission and reception of analog broadcast TV systems. (6)
- Q.4** a. What do you understand by Huffman coding? What is the principle in generating the Huffman code? (6)

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- b. Briefly describe “Lossy Compression” method. Where is it used? (4)
- c. What is MIDI? How is a basic MIDI message structured? (6)
- Q.5** a. When compression ratio is low for an image data using lossless compression technique? What methods are adopted for higher compression ratio? Also describe when Distortion measure is used? (8)
- b. What is the significance of JPEG standard? Describe any two modes that JPEG standard support. (8)
- Q.6** a. What does MPEG-1 and MPEG-2 standard signify for? State weakness of MPEG-1 over MPEG2. Also differentiate between them. (8)
- b. Differentiate between I-Frame and P-Frame and their coding. (8)
- Q.7** a. What is the significance of MPEG-7? Explain object-based visual coding in MPEG-7 (8)
- b. What is the significance of ADPCM in speech coding? Explain G.726 ADPCM. (8)
- Q.8** a. What do you understand by RSVP? State its features. (8)
- b. State the three domains where MPEG-4 has proven to be successful. Also list features of MPEG-4. (8)
- Q.9** a. What are the various techniques of animation in multimedia? Also explain principles of animation. (8)
- b. Explain the commonly used DVD formats in multimedia. (8)