

AMIETE – ET/IT (Current & New Scheme)

Time: 3 Hours

December 2016

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. MP3 is an extension of a _____ file.

(A) Sound	(B) Music
(C) Audio	(D) All of these
- b. Which one of the following audio formats was developed by Microsoft?

(A) AIFF	(B) MIDI
(C) Real Audio	(D) W A V
- c. Videos stored in the QuickTime format have the extension _____.

(A) .mp4	(B) .avi
(C) .jpg	(D) .mov
- d. NTSC video is a/an _____ signal with no fixed horizontal resolution.

(A) Digital	(B) MPEG
(C) Analog	(D) None of these
- e. Video signal cannot be organized in one of the following given ways that is known as _____.

(A) Component Video	(B) External Video
(C) Composite Video	(D) S-Video
- f. The following is not a color model in Video?

(A) RGB	(B) YIQ
(C) YUV	(D) YCbCr
- g. 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
- h. _____ 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

- i. Hypermedia need not be constrained as
 (A) Text based (B) Graphics
 (C) Images (D) Sound & Video
- j. PAL uses a color model with a band width of
 (A) 8 MHz channel (B) 6.25 MHz channel
 (C) 4.5 MHz channel (D) 10 MHz channel

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

- Q.2** a. What are the various media elements that are normally incorporated in multimedia presentation? Give examples how information may be conveyed through each of these media elements. (6)
- b. Explain Macromedia Flash and VRML multimedia authoring tools. (4)
- c. Calculate the storage required for a 640×480 (6)
 (i) monochrome (ii) gray-scale (iii) color image
- Q.3** a. Describe the color models YUV, YIQ and YCbCr used to describe the colors in video. (3+3+3)
- b. Write the advantages of digital representation of video. (3)
- c. Compare between various standards for the transmission and reception of analog broadcast TV systems. (4)
- Q.4** a. What is the distinction between lossy and lossless data compression? Give one example each of a lossless and a lossy compression technique. (9)
- b. Differentiate between DPCM and ADPCM with an example. (7)
- Q.5** a. What is the rationale behind Transform coding? Write a note on DCT. Is DCT a linear transform? Explain. (8)
- b. Explain with a block diagram the 3-level hierarchical JPEG encoder. (8)
- Q.6** a. Explain I-Frame Coding. (4)
- b. Discuss the differences between MPEG2 and MPEG1. (4)
- c. Discuss four common negotiable coding options specified in H.263. (8)
- Q.7** a. Distinguish between channel vocoder and formant vocoder by briefly describing each one of them. (4+4)
- b. What is the significance of MPEG-4 standard? Also explain its hierarchical structure. (8)
- Q.8** a. What is the significance of ADPCM in speech coding? Explain G.726 ADPCM. (8)
- b. Write a brief note on MPEG Layers. (8)
- Q.9** a. Describe briefly Internet Telephony. (8)
- b. Explain about the various parameters of Quality of Service (QoS) of Multimedia Data Transmission. (8)