Code: AT65/AT116   **Subject: MULTIMEDIA SYSTEMS**

AMIETE – IT (Current & New Scheme)

Time: 3 Hours   **JUNE 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. What is the best example of a hypermedia application?

   (A) WWW   **(B)** RTP
   (C) RSVP   **(D)** RTCP

b. A 640×480 24-bit colour image would require a storage of

   (A) 675.6 KB   **(B)** 921.6 KB
   (C) 843.6 KB   **(D)** 593.6 KB

c. What does PAL stand for?

   (A) Picture Application Line
   (B) Phase Application Line
   (C) Phase Alternating Line
   (D) Picture Alternating Line

d. Which of the following statements is true?

   (A) CMY is a subtractive colour model
   (B) Transformation from RGB to CMY is not possible
   (C) YUV colour model is used in NTSC colour TV broadcasting
   (D) YIQ colour model is used for PAL analog video

e. What is the entropy of an image with uniformly distributed gray level values in the range of 0-255?

   (A) 0   **(B)** 255
   (C) 8   **(D)** 128

f. The heart of any lossy compression scheme is

   (A) Distortion   **(B)** Transform
   (C) Sampling   **(D)** Quantization

g. What does JPEG stand for?

   (A) Joint Photographic Experts Group
   (B) Joint Phase Experts Group
   (C) Joint Picture Experts Group
   (D) Joint Perspective Experts Group

h. Vocoders are

   (**A**) Video coders   (**B**) Voice coders
   (**C**) Audio coders   (**D**) Vocal coders

i. What does READ stand for?

   (**A**) Relative Element Address Designate
   (**B**) Reverse Element Address Designate
   (**C**) Redundancy Expert Address Designate
   (**D**) Reverse Expert Address Designate

j. The additional frame included in the MPEG scheme is

   (**A**) I-frame   (**B**) P-frame
   (**C**) B-frame   (**D**) F-frame

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

Q.2 a. Briefly explain about shapes, animations and interactions in VRML.   **(8)**

   b. Describe in detail about Color Look-up Tables.   **(8)**

Q.3 a. Discuss about the color models used in images.   **(8)**

   b. What do you mean by Chroma subsampling? Explain**.**   **(8)**

Q.4 a. Briefly explain the structure of MIDI messages.   **(8)**

   b. What do you know about Huffman coding algorithm? Explain the coding of "HELLO" using Huffman algorithm.   **(8)**

Q.5 a. Describe about ID and 2D DCT Transforms.   **(8)**

   b. What are the observations of JPEG standard? Draw the block diagram and list the steps involved in JPEG methodology.   **(8)**

Q.6 a. With neat diagram explain H.261 P-frame coding.   **(8)**

   b. Discuss about motion compensation in MPEG-1. What is B-frame coding in MPEG-1? Illustrate with neat diagram.   **(8)**

Q.7 a. What do you understand by binary shape coding? Explain a binary shape coding algorithm**.**   **(8)**

   b. What is the significance of MPEG-21 standard? Discuss the key elements**.**   **(8)**

Q.8 a. Draw the block schematic of the channel vocoder and explain.   **(8)**

   b. Discuss the important features of MPEG-4 Audio.   **(8)**

Q.9 a. Explain in detail about RTP protocol.   **(8)**

   b. Discuss in brief about various AAL types.   **(8)**