Code: AT65   **Subject: Multimedia Systems**

AMIETE – IT

Time: 3 Hours   **DECEMBER 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. A smaller version of an image is called

   (A) Clipart   **(B)** bitmap
   (C) portable network graphic   **(D)** thumbnail

b. A_____ can be added to your presentation and then used to go to a variety of locations- for example, a web address, an e-mail address.

   (A) menulink   **(B)** hyperlink
   (C) toollink   **(D)** slidelink

c. Which of the following team members have to work mainly with visual media?

   (A) Music Composer   **(B)** Interface Designer
   (C) Video Producer   **(D)** Animator

d. What are the units for measuring the storage sizes for sound files in a computer?

   (A) Kilo Hertz   **(B)** Kilo Bytes
   (C) Mega Hertz   **(D)** Mega Bytes

e. The General MIDI numbering system in MIDI devices can range from:

   (A) 0 to 127   **(B)** 100 to 127
   (C) 1 to 128   **(D)** 128 to 12800

f. Capabilities allowing one to modify a sound recording's frequency content making it sound brighter or darker is:

   (A) Fade outs   **(B)** Fade ins
   (C) Equalization   **(D)** Splicing and Assembly

g. By default, your documents print in _____ mode

   (A) Landscape   **(B)** Portrait
   (C) Page setup   **(D)** Print view

h. Which MPEG standard provides for management and protection of Intellectual Property Rights?

   (A) MPEG-1   **(B)** MPEG-2
   (C) MPEG-21   **(D)** MPEG-44

i. Frames and key frames are found in which of the following tools:

   (A) Adobe Photoshop   **(B)** Adobe Illustrator
   (C) Adobe Director   **(D)** Adobe Flash

j. Which of the following is true about the image file formats?

   (A) PNG is proprietary standard
   (B) GIF can be embedded in a web page
   (C) PNG is an alternative to GIF
   (D) SWF is a raster file type

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. What are the various types of software used for implementing a multimedia production? Also differentiate between GIF and JPEG file formats. **(6)**

       c. Explain Macromedia Flash and VRML multimedia authoring tools. **(4)**

Q.3   a. How does a CMYK color model represent color information? Why is it called a subtractive model? **(6)**

       b. What is meant by Chroma subsampling? Explain how does it help in bandwidth reductions **(6)**

       c. Explain CCIR standards for digital video. **(4)**

Q.4   a. With the help of a diagram show how MIDI instruments can be interfaced with a PC. **(4)**

       b. Differentiate between DPCM and ADPCM with an example. **(6)**

c. With the help of a suitable example, explain the performance of Huf
encoding & decoding.   **(6)**

Q.5 a. Why is DCT necessary in JPEG compression? Does it lead to data compression?
Explain.   **(8)**

b. Give a short note on Wavelet Based Coding and Inverse DCT.   **(8)**

Q.6 a. Explain various steps involved in H.261 standard**.** Give a brief note on H.263+
Standard.   **(8)**

b. Explain various parts of the MPEG-1 standard. Describe the MPEG-1 video
standard mentioning the roles of I-,P- and B- frames.   **(8)**

Q.7 a. Differentiate between Vocoders and ADPCM as audio compression techniques.
                                                                        (8)

b. Give few advanced features of MPEG-21 and MPEG-7 over MPEG-2.   **(8)**

Q.8 a. Give a brief note on Real Time Streaming Protocol (RSTP).   **(6)**

b. With the help of a suitable diagram, explain the video transmission and bitrates
over ATM.   **(8)**

c. Explain the requirement of QOS in a multimedia transmission.   **(2)**

Q.9 a. What is a shading algorithm? How can it be used to depict the plane and curved
surfaces?   **(6)**

b. Describe the working principle of encoding digital data on a CD Surface.
Differentiate between CD-R and CD-RW.   **(8)**

c. Explain in brief the major characteristics of DVD-Video.   **(2)**