Code: AC21 / AT12   Subject: MULTIMEDIA SYS
Time: 3 Hours   Max. Marks:

JUNE 2011

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. Sampling rate and sample quantization are format parameters for specification of:

  (A) Video   (B) Audio
  (C) Text   (D) None of the above

b. The JPEG implementation should be independent of:

  (A) Image size   (B) Video size
  (C) Animation size   (D) None of the above

c. MPEG-2 AAC uses _____coding for both scale factor and frequency coefficient.

  (A) Layered   (B) Hybrid
  (C) Source   (D) Entropy

d. Continuous media for NTSC video have_____frames per second as play back rate.

  (A) 25   (B) 40
  (C) 30   (D) 35

e. Satellite broadcasting uses_____spectrum.

  (A) Kilohertz   (B) Megahertz
  (C) Gigahertz   (D) None of the above

f. ATM cells have a fixed format of size_____

  (A) 53 bytes   (B) 58 bytes
  (C) 62 bytes   (D) none of the above

g. Multimedia data can be stored in database as_____

(A) Raw data   (B) Registering data
(C) Descriptive data   (D) All of the above

h. MHEG stands for_____

(A) Media hypermedia exchange information
(B) Multimedia hypertext expert group
(C) Multimedia and hypertext information coding expert group
(D) None of the above

i. _____is a lossy image compression method

(A) JPEG   (B) MPEG
(C) MEC   (D) None of the above

j. ATM adaptation layer (AAL) converts_____

(A) User data into ATM data streams
(B) ATM data streams into user data
(C) None of the above
(D) Both (A) and (B)

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

Q.2   a. Differentiate between various data transmission modes.   **(8)**

        b. Explain the different techniques that may be employed in controlling animation.   **(8)**

Q.3   a. Describe the advantages of using an algebraic code book in CELP coding. **(8)**

        b Explain the significance of MPEG-2 and MPEG-2 AAC.   **(8)**

Q.4   a. Several protocols such as Ethernet, Token ring and FDDI are commonly used in LAN. Describe the functionalities of these three technologies and explain the differences amongst them.   **(12)**

        b. Differentiate between Cell relay and Frame relay.   **(4)**

Q.5   a. Define Multimedia Database Management System. Explain the characteristics of a MDBMS.   **(10)**

        b. Describe the various operations that can be performed on data in a MDBMS.   **(6)**

Q.6 a. Describe the three layered architecture of a hypertext system.

   b. What do you understand by anchor? How can an anchor be represented
      properly? **(8)**

Q.7 a. What is synchronization? Differentiate between live and synthetic
      synchronization. **(8)**

   b. What do you understand by dithering? Explain. **(8)**

Q.8 a. Two workstations are interconnected by a LAN. A CD player is attached to
      one workstation. Single channel audio data are transferred from the CD
      player of this workstation over the network to the other computer. At this
      remote station, the audio data are delivered to a speaker. The audio signal
      is sampled with the frequency of 44.1 kHz. Find M, R, B. **(10)**

   b. What is the significance of JPEG standard? Describe any two modes that
      JPEG standard support. **(6)**

Q.9 Write short notes on any **TWO** of the following**:**

   (i)   DMIF.
   (ii)   File System in Multimedia System Design.
   (iii) Multiplexing. **(8×2)**