ROLL NO. _____

Code: AC21/AT12 **Subject: MULTIMEDIA SYSTEMS**

AMIETE – CS/IT (OLD SCHEME)

DECEMBER 2011

Time: 3 Hours **Max. Marks: 100**

NOTE: There are 9 Questions in all.

- **Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.**
- **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. An application which uses a collection of multiple media sources text, graphics, images, sound/audio, animation is known as

(A) Hypermedia **(B)** Multimedia
(C) Newmedia **(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. An application supported by MPEG-7 is

(A) Automatic speech recognition **(B)** Automatic text searching
(C) Automatic visual event recognition **(D)** None of the above

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. FDDI support

(A) Synchronous **(B)** Asynchronous
(C) Both **(A)** and **(B)** **(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. MIDI stands for_____

(A) Media Interface Development Information
(B) Musical Instrument Digital Interface
(C) Multimedia and hypertext information Development Interface
(D) None of the above

i. _____ is a lossy image compression method.

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

j. RTP is a _____.

(A) Setup protocol for Internet resource reservation
(B) Real –time Transport protocol
(C) Real time protocol
(D) Both **(A)** and **(C)**

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. **(6)**

b. What is meant by the terms static media and dynamic media? Give examples of each type of media. **(4)**

c. What is meant by the terms frequency and temporal masking of two or more audio signals? What is cause of this masking? **(6)**

Q.3 a. What is the distinction between lossy and lossless data compression? Give one example each of a lossless and a lossy compression technique**.** **(4)**

b Calculate the uncompressed digital output if a video signal is sampled using the following values: (i) 25 frames per second (ii) 160 ×120 pixels (iii) True (Full) colour depth. **(4)**

c. Explain the scope and significance of MPEG-4. **(8)**

Q.4 a. Describe the functionalities of any two technologies that are commonly used in LAN. **(8)**

b. What do you understand by Multiplexing? Differentiate between Frequency division multiplexing and Time division multiplexing. **(8)**

Q.5 a. What do you understand by RTP? How does it work? Explain. **(8)**

b. What major factors affect the Quality of Service of a multimedia application? **(8)**

Q.6 a. What do you understand by hypertext system? Describe the three layered architecture of a hypertext system**.** **(8)**

b. Describe the various communications devices available for personal computers and how they may be used in multimedia production and delivery**.** **(8)**

Q.7 Briefly state the Huffman coding algorithm. Show how you would use Huffman coding to encode the following set of tokens:
AAABDCEFBBAADCDF **(16)**

Q.8 a. Describe the characteristics of MDBMS. **(8)**

b. What is the significance of MPEG-7 standard? Describe any two modes that MPEG-7 standard support. **(8)**

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

(i) Multimedia databases
(ii) Multimedia operating Systems
(iii) MP3 compression scheme **(8×2)**