

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

Code: AC21/AT12

Subject: MULTIMEDIA SYSTEMS

- 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)

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- 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)