

AMIETE – CS/IT (OLD SCHEME)

Code: AC21 / AT12
Time: 3 Hours

Subject: MULTIMEDIA SYSTEMS
Max. Marks: 100

DECEMBER 2010

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 half an hour 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 are the important format parameters for specification of audio are

- (A) Sampling rate and Sample Quantization
- (B) Data format and Hardware
- (C) Synthesizer and channels
- (D) Amplitude and loudness

b. Hypermedia includes

- (A) Graphics and images
- (B) Continuous media
- (C) Text
- (D) All of them

c. The storage requirement of an uncompressed audio signal of telephone quality for one second playback, when it is sampled at 8kHz and quantized with 8bits/sample is

- (A) 64kbits
- (B) 128kbits
- (C) 256kbits
- (D) 64bits

d. Identify the variations not supported by JPEG standard

- (A) Sequential mode
- (B) Progressive mode
- (C) Lossless mode
- (D) None of the above

e. A message sent to all nodes in the domain is called in network terminology as

- (A) Unicast
- (B) Multicast
- (C) Broadcast
- (D) All of them

f. Media Control Interface is a service provided by

- (A) Windows Multimedia Extensions
- (B) JPEG
- (C) MIDI
- (D) Windows Programming environment

- g. Reliable data transfer is provided by
- (A) TCP (B) UDP
(C) LAN (D) IP
- h. Identify the service not provided by Real-time Transport Protocol (RTP)
- (A) Error Detection (B) Source Identification
(C) Framing (D) Resource Reservation
- i. The usual bit rate, which ATM switches are able to switch, is around
- (A) 150Mbits/s (B) 100Mbits/s
(C) 256Mbits/s (D) 150kbits/s
- j. Recall is
- (A) $\frac{\text{Desired images returned}}{\text{All retrieved images}}$ (B) $\frac{\text{All retrieved images}}{\text{Desired images returned}}$
(C) $\frac{\text{Desired images returned}}{\text{All desired images}}$ (D) $\frac{\text{All desired images}}{\text{Desired images returned}}$

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

- Q.2** a. Write about the “Notion of Synchronization” in multimedia systems (8)
b. How is Synchronization achieved in a Distributed Environment (8)
- Q.3** Explain JPEG Encoding and decoding. (16)
- Q.4** a. List and explain the four major steps of data compression (8)
b. State the need for Global Motion Compensation and write about the four major components (8)
- Q.5** a. Distinguish between MPEG1 and H.261 (8)
b. Explain with neat block diagram various steps of JPEG 2000 compression. (8)
- Q.6** a. Differentiate between hyper media and hyper text. (8)
b. Compare VOP based coding with Frame based coding. (8)
- Q.7** Justify with respect to storage devices, file structures and placement on disk, multimedia system is different from the conventional system (16)

- Q.8** Write short notes on the following:
- (i) RTP
 - (ii) RSVP
 - (iii) Video-conferencing standard (16)
- Q.9** a. Elaborate on the approach of feature localization relative to traditional image segmentation method. (12)
- b. What are the different ways in which images can be stored in databases (4)