USN ☐☐☐☐☐☐☐☐☐☐   **06EC841**

Eighth Semester B.E. Degree Examination, June/July 2011
Multimedia Communications

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions selecting*
at least TWO questions from each part.

PART – A

1 a. What is multimedia? State the basic form of representation of text, an image, audio and video. **(08 Marks)**
   b. List different types of multimedia networks. Explain any two networks in detail. **(08 Marks)**
   c. Derive the maximum block size that should be used over a channel which has mean BER probability of 10^{-4} if the probability of a block containing on error and hence being discarded is to be 10^{-1}. **(04 Marks)**

2 a. Explain the following :
   i)   Quantization intervals
   ii)   Hyper text
   iii) Raster scan principles
   iv)   Aspect ration
   v)   4:2:2 format. **(10 Marks)**
   b. With a neat diagram explain audio/sound synthesizer. **(06 Marks)**
   c. Assuming the bandwidth of speech signal is from 50 Hz to through 10 kHz and that of music signal is from 15 Hz to through 20 kHz. Derive the bit rate that is generated by the digitization procedure in each case assuming the Nyquist sampling rate is used, with 12 bits per sample for speech signal and 16 bits per sample for music signal. **(04 Marks)**

3 a. Encode the string "went". Comprising characters with probabilities of e = 0.3, n = 0.3, t = 0.2, w = 0.1, • = 0.1 using arithmetic coding. **(10 Marks)**
   b. With neat block diagram explain JPEG encoder. **(10 Marks)**

4 a. Describe third order predictive DPCM signal encoder and decoder. **(10 Marks)**
   b. With neat diagram, explain video compression principles. **(10 Marks)**

PART – B

5 a. Explain CSMA/CD and principle of operation of token ring. **(10 Marks)**
   b. Explain the LAN protocols. **(10 Marks)**

6 a. With example explain fragmentation and reassembly in the internet. **(10 Marks)**
   b. Explain datagram format of IPv6. **(10 Marks)**

7 a. Explain the ATM cell formats. **(10 Marks)**
   b. Explain LAN emulation in ATM. **(10 Marks)**

8 a. Explain TCP/IP protocol suite. **(10 Marks)**
   b. Explain RTP and RTCP. **(10 Marks)**

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