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06EC841

Eighth Semester B.E. Degree Examination, June 2012
Multimedia Communication

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. With the help of a diagram, describe the main components of PSTN and show how a high speed modem provides multiple services in addition to basic telephony. (10 Marks)
- b. Explain the working principle of circuit-mode and packet-mode of operation of multimedia networks. List out salient features of each type of networks. (10 Marks)
- 2 a. Explain the principle of operation of a PCM speech codec, with a block diagram. (06 Marks)
- b. With the aid of diagrams, describe the following digitization formats, i) 4 : 2 : 2 ii) QCIF. For each format, state the temporal resolution, Spatial resolution, bit rate and give an example application for each format. (10 Marks)
- c. Find out the time taken to transmit the following digitized images at both 64 Kbps and 1.5 Mbps :
 - i) A $640 \times 480 \times 8$ VGA compatible image.
 - ii) A $1024 \times 768 \times 24$ SVGA compatible image. (04 Marks)
- 3 a. With the help of a diagram, identify the main stages of operation of JPEG and explain each stage in detail. (Encoder and decoder) (14 Marks)
- b. Code the given string “ABACADABACADABACABAB” using Huffman coding. Derive Huffman code tree. Determine the savings in transmission band width over normal ASCII and binary coding. (06 Marks)
- 4 a. Explain MPEG-4 coding principles with the help of a neat diagram. (10 Marks)
- b. With the help of a neat diagram, explain LPC encoder and decoder. (10 Marks)

PART – B

- 5 a. Explain in detail, with diagrams, the token ring wiring configurations, frame formats, frame transmission and reception with priority operation. (10 Marks)
- b. Explain in detail, with diagrams LAN protocols and protocol frame work. (10 Marks)
- 6 a. Explain datagram, format of IPV6. (10 Marks)
- b. With example, explain fragmentation and reassembly in the internet. (10 Marks)
- 7 a. Write the cell format of ATM. With the help of cell switching schematic, explain how cells are routed through ATM switch. (12 Marks)
- b. Explain classical IP over ATM (IPOA) LAN. (08 Marks)
- 8 a. Explain TCP/IP protocol suite. (10 Marks)
- b. Explain RTP and RTCP. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. $42+8=50$, will be treated as malpractice.