Fifth Semester MCA Degree Examination, June/July 2016

Multimedia Systems

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions.*

1   a.   What is multimedia? Explain its elements.   (10 Marks)
    b.   With a diagram, explain multimedia workstation architecture.   (05 Marks)
    c.   Explain DSP architecture related to multimedia.   (05 Marks)

2   a.   Explain the terms 'sampling rate' and 'quantization' related to sound.   (04 Marks)
    b.   Write a note on MIDI standard.   (06 Marks)
    c.   With diagrams, explain the speech recognition system.   (10 Marks)

3   a.   Explain briefly image storage format.   (10 Marks)
    b.   What are the transformation steps involved in image recognition?   (10 Marks)

4   a.   The CGA has a resolution of 320 × 320 pixels, with simultaneous display of 4 colors.
         Calculate necessary storage capacity per frame.   (04 Marks)
    b.   Explain different methods of controlling the animation.   (06 Marks)
    c.   The letters A, B, C, D and E to be compressed and have relative probabilities of the
         occurrences as P(A) = 0.40, P(B) = 0.24, P(C) = 0.16, P(D) = 0.12, P(E) = 0.08. Obtain
         Huffman code for these characters.   (10 Marks)

5   a.   What are the steps involved in JPEG image compression?   (10 Marks)
    b.   Explain Lossy sequential DCT – based mode of JPEG compression.   (10 Marks)

6   a.   Explain the sectional view of data track on an optical disk.   (10 Marks)
    b.   With a diagram, explain CD – ROM data hierarchy. Also explain mode 1 and mode 2 of it.
                                                                                            (10 Marks)

7   a.   With a neat diagram, explain TWAIN architecture.   (10 Marks)
    b.   List and explain, the key format information carried out across in RTF document file.
                                                                                            (06 Marks)
    c.   What is text recognition? Explain.   (04 Marks)

8   a.   Mention different types of workflow. Draw a workflow diagram for imaging application.
                                                                                            (10 Marks)
    b.   Explain the components of multimedia system.   (10 Marks)

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