[4959]-205

B.E.(Computer Engineering)
a:IMAGE PROCESSING
(2008 Course)(Semester-I) (Elective-I)

Time :3Hours]   *[Max. Marks : 100*
Instructions to the candidates:
    1)   *Answer any three questions from each section.*
    2)   *Answers to the two sections should be written in separate answer books.*
    3)   *Neat diagrams must be drawn wherever necessary.*
    4)   *Assume suitable data if necessary.*

SECTION-I

Q1) a)   Explain the fundamental steps in Digital image Processing with block diagram.   **[8]**

    b)   Explain the software and hardware required for digital imagining.   **[8]**

OR

Q2) a)   Write a short note on Human Visual System.   **[8]**

    b)   Explain application of image processing. Explain different types of images.   **[8]**

Q3) a)   What is the need of transformation? Explain walsh transform.   **[8]**

    b)   What is image enhancement? Explain image enhancement techniques in spatial domain.   **[8]**

OR

Q4) a)   Explain the contract stretching using histogram equalization.   **[8]**

    b)   Explain the basic image pre-processing steps.   **[8]**

Q5) a)   With the help of appropriate mask explain the following.   **[9]**

      i)   Point detection   ii)   Edge detection

    b)   What is texture? Explain statistical and spectral descriptor.   **[9]**

OR

Q6) a) Explain different methods of edge detection methods. **[9]**

b) Write short note on image processing filters. **[9]**

SECTION-II

Q7) a) Explain RLC coding and arithmetic coding with examples. **[8]**

b) Explain the methods used for lossless image compression. **[8]**

OR

Q8) a) Explain the image degradation and restoration model. **[8]**

b) Explain Blind-Deconvolution technique. **[8]**

Q9) a) Why image compression is needed? Explain Huffman coding **[8]**

b) Explain classification of object recognition approaches. **[8]**

OR

Q10) a) Explain the dictionary-based compression with suitable example. **[8]**

b) What are the regional descriptors for texture representation? **[8]**

Q11) Write short note **[18]**

a) JPEG 2000

b) Sub-band coding

c) Dimension reduction

OR

Q12) Write short note **[18]**

a) WAVELET with properties

b) Image Pyramids

c) Character Recognition application.

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