P1802

[4859]-205

B. E. (Computer)
a - IMAGE PROCESSING
(2008 Course) (410444) (Semester-I) (Elective-I)

Time : 3Hours]   *[Max. Marks : 100]*

Instructions to the candidates:

1)   Answer any three Question from each section.
2)   Answers to the two sections should be written in separate books.
3)   Neat diagrams must be drawn wherever necessary.
4)   Figures to the right indicate full marks.

SECTION-I

Q1) a)   Explain any one technique for image acquisition in detail?   **[10]**

b)   What are the ways of representation of image? Explain?   **[6]**

OR

Q2) a)   Define Brightness and Contrast of an image? Also explain two phenomena related to the perceived brightness of an image?   **[10]**

b)   Discuss in detail the orthogonal transform?   **[6]**

Q3) a)   What is color space? Mention various types of colour spaces with their specific applications?   **[8]**

b)   Describe the photographic model properties and their relation to image processing application?   **[8]**

OR

Q4) a)   Define image sampling and quantization and explain the process of Digital Image Formation?   **[8]**

b)   Define Histogram of an image? Plot and explain the nature of histogram for the following image's   **[8]**

i)   High Brightness image

ii)   Low brightness image

iii) Low contrast image

iv)   High contrast image

Q5) Write short notes on: **[18]**

    a)   Square Error Restoration Technique

    b)   Homomorphism Filtering

    c)   Histogram Equalization

<div align="center">OR</div>

Q6) a)   Describe Image Enhancement and write a pseudo code of obtaining the negative of an image? **[8]**

    b)   Explain the types of image segmentation? What is histogram thresholding technique? **[10]**

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SECTION-II

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Q7) a)   Explain 'Wiener Filter' with reference to image Restoration? **[8]**

    b)   How Edge detection operator are applied to a real time application? Explain in detail. **[8]**

<div align="center">OR</div>

Q8) a)   Compare Image Enhancement with Image Restoration? **[8]**

    b)   Explain Huffman coding for image compression considering an example? **[8]**

Q9) a)   Write pseudo code for converting RGB image to HSI ? **[8]**

    b)   Draw and explain image compression system block diagram? **[8]**

<div align="center">OR</div>

Q10) a)   Explain various noise models occurring in an image? **[8]**

    b)   Explain the morphology technique used in image processing? **[8]**

Q11) a)   Explain conceptually any two application of image processing in real time situation. **[9]**

    b)   What is the role of Image processing in multimedia domain? **[9]**

<div align="center">OR</div>

Q12) a)   Write short note on water Marking? **[8]**

    b)   Explain with the help of block diagram the steps required for remote sensing applications of an image processing. Also suggest the algorithm for each block? **[10]**

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