

Total No. of Questions : 12]

SEAT No. :

P1127

[4659]-351

[Total No. of Pages :2

B.E. (Instrumentation & Control)
c - DIGITAL IMAGE PROCESSING
(2008 Course) (Elective IV) (Semester - II)

Time : 3Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Answer to the two sections should be written in seperate books.*
- 2) *Neat diagrams must be drawn wherever necessary*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*

SECTION-I

Q1) Explain in detail the hardware components of image processing system. **[18]**

OR

Q2) a) Explain image resolution with suitable example. **[10]**

b) List applications of Digital Image processing. Explain any one with suitable diagram. **[8]**

Q3) a) Explain the structure of human eye with respect to digital image capturing phenomenon. **[8]**

b) Explain Histogram with suitable example. **[8]**

OR

Q4) Describe various mathematical operations on digital image. **[16]**

Q5) Explain 2D DFT and explain it properties. **[16]**

OR

Q6) Explain 2D DCT and explain it properties. **[16]**

P.T.O.

SECTION-II

Q7) Explain image enhancement using average and weighted average filter with suitable example. **[18]**

OR

Q8) a) Explain image enhancement in frequency domain using Butterworth low pass filter. **[10]**

b) Compare time domain and frequency domain image enhancement. **[8]**

Q9) a) What is image restoration? Explain the process of image restoration. **[8]**

b) Explain image restoration using wiener filter. **[8]**

OR

Q10) Explain image restoration using inverse filter and its digital implementation. **[16]**

Q11) a) Define Pattern and pattern classification. **[8]**

b) List pattern classifiers. Explain any one pattern classifier with suitable example. **[8]**

OR

Q12) a) Define image segmentation. Explain need and applications of image segmentation. **[8]**

b) Explain Sobel operator for edge detection. **[8]**

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