Total No. of Questions : 12]

SEAT No. :

P2792

[Total No. of Pages : 2

[5154]-174
B.E. (Computer Engineering)
IMAGE PROCESSING
(2008 Course) (Semester - I) (Elective - I)

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

Instructions to the candidates:

1) ***Answer any 3 questions from each section.***
2) ***Answers to the two sections should be written in separate answer-books.***
3) ***Neat diagram must be drawn wherever necessary.***
4) ***Assume suitable data.***

SECTION - I

Q1) a) Write a short note on Human Visual System. **[8]**

b) Explain the fundamental steps in Digital Image Processing. **[8]**

OR

Q2) a) What is digital image processing? Explain any two applications of image processing. **[8]**

b) Explain the representing digital images. **[8]**

Q3) a) What is image interpolation? How is useful in image processing? **[8]**

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

OR

Q4) a) Explain image enhancement techniques in frequency domain. **[8]**

b) What is smoothing? Explain how Gaussian filter is used for smoothing. **[8]**

Q5) a) Explain Chain codes and B-Splines for boundary representation. **[9]**

b) Explain the region based segmentation and region growing with an example. **[9]**

OR

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Q6) a) With the help of appropriate mask explain the following: **[9]**

i) Point detection

ii) Corner detection

b) What is region splitting and merging? **[9]**

SECTION - II

Q7) a) Discuss about the Wiener Filtering. **[8]**

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

OR

Q8) a) Explain image restoration technique to remove the blur? **[8]**

b) Explain band-pass filter and Notch filters. **[8]**

Q9) a) What is need of data compression? Explain Run-length coding. **[8]**

b) How an image is compressed using JEPG Image compression with a image matrix. **[8]**

OR

Q10)a) What is pattern? Explain any pattern matching technique. **[8]**

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

Q11)a) What is Haar wavelet in image processing? **[9]**

b) JPEG 2000: How it works? **[9]**

OR

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

a) Principal Component Analysis.

b) Sub-band Coding.

c) Image pyramids.