

Total No. of Questions : 12]

SEAT No. :

P3385

[4959]-125

[Total No. of Pages : 2

B.E.(Electronics)

**b: IMAGE PROCESSING & MACHINE VISION
(2008 Course)(Elective-III)(Semester-II) (404209)**

Time :3Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Answer three questions from section I and three questions from section II.*
- 2) Neat diagrams must be drawn wherever necessary.*
- 3) Figures to right the indicate full marks.*
- 4) Assume suitable data, if necessary.*

SECTION-I

Q1) a) With the help of neat diagram explain various steps in image processing. **[10]**

b) With reference to relation between pixel explain. **[8]**

- i) 4 connectivity
- ii) 8 connectivity
- iii) Mixed Connectivity

OR

Q2) a) Explain how sampling and quantization is used in an image. **[10]**

b) Briefly explain the following: **[8]**

- i) Brightness Adaptation
- ii) Simultaneous contrast

Q3) a) With the help of examples explain different arithmetic operations. **[8]**

b) What are the important properties of Gaussian Filter? Explain. **[8]**

OR

Q4) a) With the help of masks explain Mean Filter and Median Filter. **[8]**

b) Explain Low pass Filter in frequency domain. **[8]**

Q5) a) What is the significance of region growing and merging? **[8]**

b) Explain how Fourier Descriptors help in defining boundaries. **[8]**

OR

P.T.O.

- Q6) a)** Give the difference between canny edge detection and pyramid edge detection. [8]
- b)** With the help of example explain how chain codes help in edge detection. [8]

SECTION-II

- Q7) a)** Explain image compression using JPEG? [10]
- b)** In transform based image compression discuss the effect of subimage size on [8]
- i) Compression Performance
 - ii) Computational complexity

OR

- Q8) a)** What is the advantage of Variable Length Coding explain with example. [8]
- b)** Explain how Hough Transform is used for edge Linking. [10]
- Q9) a)** What is the significance of moments and how are they used to represent images? [8]
- b)** Explain how histogram is used to represent regions. [8]

OR

- Q10) a)** What are the different shape features? Explain with example. [8]
- b)** What are texture Features? Give their significance. [8]
- Q11) a)** What is the difference between statistical and syntactical pattern Recognition. [8]
- b)** Explain Graph Matching Techniques. [8]

OR

- Q12) a)** With the help of a diagram explain single Perspective Camera. [8]
- b)** Explain scene reconstruction from multiple views. [8]

