Total No. of Questions : 4]

PC-279

SEAT No. :

[Total No. of Pages : 2

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B.E. (Robotics and Automation) (Insem.)

MACHINE VISION SYSTEM

(2019 Pattern) (Semester - VII) (411501)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates :

1) *Solve Q.1 or Q.2, Q.3 or Q.4.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data, if necessary.*
4) *Neat diagrams must be drawn wherever necessary.*

Q1) a) Explain functions of machine vision system with block diagram and explain the significance of counting and decoding in vision system. **[7]**

b) Define Following : i) Saturation ii) Pixel iii) Hue iv) Contrast. **[4]**

c) State applications of machine vision in robotic industry and manufacturing industry. **[4]**

OR

Q2) a) Describe the steps of machine vision processing with the neat and labelled block diagram. **[8]**

b) What is sampling and quantizing? (Explain with example) **[7]**

Q3) a) Define Histogram of image. Explain the concept of Histogram Equalization technique for image enhancement with example. **[8]**

b) What is function of filters in machine vision system? Write a short note on Gaussian low pass filter. **[7]**

OR

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Q4) a) For the following image : **[8]**

i) Compute the histogram and the pdf of given 3-bit image

ii) Generate equalized image by using global histogram equalization processing.

iii) Draw the histogram of original image and processed image.

iv) What will be the probability of intensity value 4 in the processed image?

1 2 3 2 5

7 1 4 3 1

6 1 5 2 4

7 2 3 6 4

1 6 5 3 2

b) Write a short note on image acquisition model. **[7]**

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