SEAT No. :

P2329

[5254]-664
B.E. (Computer Engineering)
IMAGE PROCESSING
(2012 Pattern) (Semester - I)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer Que. 1 or Que. 2, Que. 3 or Que. 4, Que. 5 or Que. 6, Que. 7 or Que. 8*
2) *Neat diagrams should be drawn wherever necessary.*
3) *Use of electronic pocket calculator is allowed*
4) *Assume suitable data, jf necessary.*

Q1) a) Explain Nyquist rate, aliasing effect and fold over frequencies in case of two dimensional sampling. **[6]**

     b) Explain Spatial domain techniques used in image enhancement. **[8]**

     c) Define histogram? If all the pixels in an image are shuffled, will there be any change in the histogram? Justify your answer. **[6]**

OR

Q2) a) What do you mean by Image file format? Mention the name and use of frequently used file format. **[6]**

     b) Define histogram? Discuss how histogram equalization helps in image enhancement with example. **[8]**

     c) Explain watershed segmentation method in image processing. **[6]**

Q3) a) Explain any two methods used for lossless image compression. **[8]**

     b) Define feature and pattern. Discuss relationship between image processing and pattern recognition. **[8]**

OR

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Q4) a) Explain different approaches for object recognition. **[8]**

b) Explain Vector Quantization and its applications. **[8]**

Q5) a) Write a short note on any two: **[10]**

i) Images from X-rays and its application

ii) Images from r-rays

iii) Does and risk

b) Explain picture archives and communication systems (PACS). **[8]**

OR

Q6) a) i) List three ways in which the contrast is maximized in mammography with a short explanation of the principles behind each. **[18]**

ii) List two factors that help to achieve high spatial resolution in mammography

iii) Why should noise be minimized in mammography? How it can be minimized?

Q7) a) Discuss workflow of digital photogrammetric process. **[8]**

b) Explain coordinate system for photogrammetry. **[8]**

OR

Q8) a) Explain remote sensing process and state advantages and limitation of remote sensing? **[8]**

b) Explain different stereo imaging concepts from satellites. **[8]**

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