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B.E/B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC2012

**GEOINFORMATICS BRANCH
FOURTH SEMESTER – (REGULATIONS 2008)
GI 9252 DIGITAL IMAGE PROCESSING**

Time : 3 hrs

Max Mark : 100

- Instructions :
1. Draw neat sketches wherever necessary
 2. Answer ALL Questions

Part A (10 x 2 = 20)
Answer All Questions

1. Write short note on different formats used to store the satellite images.
2. What do you understand by the terms image sampling and quantization?
3. List out different sources of geometric and radiometric errors.
4. What do you mean by preprocessing? Why is it necessary?
5. Define image enhancement. Why is it important in image processing?
6. What do you mean by image fusion ?
7. Write short note on Baye's theorem.
8. Differentiate between supervised and unsupervised classifiers.
9. Define Artificial Neural Network (ANN). List different types of ANN.
10. What do you understand by the term "expert system"?

Part B (5 x 16 = 80)

- 11a i) Explain in details different satellite data products used for the analysis. 4
- ii) Describe in detail the working principles and the payload characteristics of any one of the remote sensing satellite. 12

(PTO)

- 12a i) Describe in detail different methods used to correct topographic effects in the satellite image 6
- ii) Explain in detail different methods used to correct the atmospheric effects in the satellite image. 10

(OR)

- 12b i) Explain briefly about image-encoding and decoding. 4
- ii) Explain in detail various steps involved in the geometric rectification of the satellite images. 12

- 13a i) Describe in detail spatial filtering and edge enhancement techniques used for image enhancement. 9
- ii) Explain in detail the role of Fourier transform in digital image processing. 7

(OR)

- 13b i) What do you mean by Histogram? Describe different types of image histogram with its importance in image processing. 6
- ii) Describe in detail how the scale space transform can be used in image enhancement 10

- 14a i) Explain different supervised classifiers used to classify the satellite image. 10
- ii) Discuss in detail about the error matrix and accuracy assessment 6

(OR)

- 14b i) Discuss in detail various unsupervised classification methods used to classify the satellite image. 16

- 15a i) Explain in detail how Artificial neural network can be used to classified the satellite image. 9
- ii) Discuss in detail how the expert system is used to classify the satellite image 7

(OR)

- 15b i) Explain in detail how fuzzy logic can be used to classify the satellite image. 8
- ii) Discuss in detail how the sub-pixel classification is carried out. 8