CIVIL ENGINEERING

SIXTH SEMESTER – (REGULATION 2005/2009)

PTCE 473/PTCE 9355 – FUNDAMENTALS OF REMOTE SENSING AND GIS

Time: 3 hrs   Max Marks: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. Draw the sketch of Electromagnetic Spectrum.

2. Write the importance of Wave theory and Particle Theory in Remote Sensing.

3. Differentiate between sun synchronous and geosynchronous orbits.

4. What are the advantages of Microwave remote sensing?

5. What is the importance of Image Enhancement?

6. What is Pre-processing of Image?

7. List the types of Map Projections?

8. Define Geographical Information System?

9. Differentiate Vector and Raster Data?

10. Write down the necessity of Dougla's Peukar algorithm?

Part – B (5 x 16 = 80 Marks)

11. Brief about the Spectral Signature Concept. With neat sketch explain about the spectral reflective characteristics of Water, Vegetation and Soil.   (16)

12 (a) Explain in detail about the characteristics and applications of SPOT, IRA 1A and IRS 1C missions   (16)

(OR)

12.(b)(i) Write with neat sketch about the Across-Track thermal scanner   (10)

(ii) Differentiate between multispectral Whisk broom and Push broom scanners. (6)

13. (a) (i) Discuss about image interpretation Techniques   (8)

(ii) Write in detail about Image Enhancement Techniques.   (8)

(OR)

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13. (b) Explain in detail about the methods of image classification. (16)

14. (a) Discuss in detail about Map Projection. (16)

(OR)

14. (b) Explain about the basic components of Geographical Information System. (16)

15. (a) (i) Explain Data Compression Techniques. (8)

(ii) Brief about Land Information System. (8)

(OR)

(b) Explain in detail about the application GIS techniques for optimal Highway Alignment modeling. (16)