

GEOINFORMATICS ENGINEERING BRANCH

SEVENTH SEMESTER

GI 9401 THERMAL & HYPER SPECTRAL REMOTE SENSING

(REGULATIONS 2008)

Time : 3 hr

Max Marks : 100

Answer ALL QuestionsPart – A (10 x 2 = 20 Mark)

1. Why radiation methods of heat transfer is important for Remote Sensing?
2. Define emissivity.
3. Define Thermal inertia.
4. State the inverse square law
5. What is BRDF?
6. What is the advantage of hyper spectral over multispectral remote sensing?
7. What is virtual dimensionality?
8. State the Hughes phenomenon.
9. What is the limitation of Spectral Angle Mapper?
10. List any four data compression technique.

Part – B (5 x 16 = 80 Mark)

11. i) Explain the thermal radiation with terrain elements. (10)
ii) Write any six thermal sensors and their specifications. (6)
12. a. Explain the radiometric calibration methods of thermal scanners. (16)
OR
b. Discuss the application of thermal remote sensing for land surface temperature mapping. (16)
13. a. i) Explain the factors affecting the field spectrum. (12)
ii) Write about field spectroradiometer. (4)
OR
b. i) Discuss the challenges to interpret hyperspectral remote sensing data. (8)
ii) Describe the data calibration methods of hyper spectral data. (8)
14. a. i) Explain the Block based Maximum Likelihood classification. (8)
ii) Discuss the Library matching techniques in spectral analysis. (8)

(OR)

b. i) Explain the spectral mixture analysis in detail.(12)

ii) Write short notes on MNF transformation (4)

15. a.i) Explain the application of hyper spectral remote sensing for forestry with case study. (16)

(OR)

b.i) Discuss the application of hyper spectral remote sensing for environmental studies. (16)