Roll No. | | | | | | | | | | |

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

GEOINFORMATICS

Semester II

GI 8201 OPTICAL AND THERMAL REMOTE SENSING

(Regulation 2012)

Time : 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 marks)

1. What is meant by spectral signature?
2. State the effects of Raleigh scattering on satellite imagery.
3. What are the uses of stereo satellite data products?
4. Mention any two satellite sensors whose spatial resolution is less than 100 cm.
5. Distinguish between radiant temperature and kinetic temperature.
6. List out the applications of thermal remote sensing.
7. Distinguish between multispectral remote sensing and hyperspectral remote sensing.
8. What is meant by virtual dimensionality in hyperspectral remote sensing?
9. What is the effect of applying low pass technique in image processing?
10. Enumerate the causes of geometric distortions in satellite imagery.

Part – B (5 x 16 = 80 marks)

11. (i) Explain the characteristics of various regions in electromagnetic spectrum. (8)
    (ii) With flow diagram, explain the components of remote sensing. (8)

12. a) Explain the factors affecting the resolution of high resolution imagery.

    (OR)

    b) Describe the principle of operation of geo-synchronous and sun-synchronous satellites.

13. a) Explain the sources of thermal image degradation and corrective measures.

    (OR)

    b) Discuss the points to be considered while interpreting thermal images.

14. a) Explain any two methods of imaging spectroscopy.

    (OR)

    b) Describe the characteristics of hyperspectral remote sensing data.

15. a) Explain the following image enhancement techniques.
    (i) Band ratioing (8)
    (ii) Principal component analysis (8)

(OR)

b) Explain the principles and applications of a lidar system.