

**A 193**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Fifth Semester

Civil Engineering

CE 333 — BASICS OF REMOTE SENSING AND GIS

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Draw sketches wherever necessary.

PART A — (10 × 2 = 20 marks)

1. What is active and passive remote sensing? Differentiate between them.
2. State Stefan-Boltzmann's law.
3. What is a specular reflector? Give examples.
4. Sketch the spectral reflectance curve of vegetation.
5. Define spatial resolution with suitable examples.
6. What is backscattering phenomenon?
7. List the types of projection. Which projection system is adopted in the Indian Sub-continent?
8. How is data output handled in GIS?
9. Define tone and texture with illustrations.
10. State four examples of applications of GIS for effective earth resources management.

PART B — (5 × 16 = 80 marks)

11. Explain in detail the interaction of electro-magnetic radiation (EMR) with vegetation, soil and water with suitable diagrams.

12. (a) Discuss the types of platforms for remote sensing sensors.

Or

(b) (i) How is remote sensing possible with the help of electromagnetic radiation? (8)

(ii) Give a technical note on IRS series of satellites. (8)

13. (a) (i) Explain the principle of multispectral scanner with example. (10)

(ii) Differentiate between sun-synchronous and geo-synchronous orbits. (6)

Or

(b) (i) Write a detailed description of SAR and its characteristics. (10)

(ii) What are the advantages of microwave remote sensing? (6)

14. (a) (i) What is Raster and Vector data? (4)

(ii) Compare and contrast between raster and vector data. (6)

(iii) Give short notes on management of data in GIS. (6)

Or

(b) Discuss the various hardware and software requirements of GIS. (16)

15. (a) Elaborate the potential applications of remote sensing and GIS in ground water resources management. (16)

Or

(b) (i) Write notes on interpretation elements and its utilities. (6)

(ii) What are the characteristics of digital satellite image? (5)

(iii) How do you incorporate attribute data into geographical data? (5)