

A 1089

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Fifth Semester

Civil Engineering

CE 333 --- BASICS OF REMOTE SENSING AND GIS

Time : Three hours

Maximum : 100 marks

Draw neat sketches wherever necessary.

Answer ALL questions.

PART A --- (10 × 2 = 20 marks)

1. What is meant by platform in remote sensing?
2. Name the regions of electromagnetic spectrum useful for remote sensing.
3. Define scattering of EMR.
4. What is spectral signature?
5. How are satellites classified?
6. Name the sensors used in IRS 1-D satellite.
7. Distinguish between spatial and non-spatial data.
8. What are the different data input methods in GIS?
9. What is visual interpretation?
10. List the important preprocessing techniques used in image processing.

11. (i) Explain the basic components of Remote sensing system with a neat sketch. (8)
- (ii) Draw a sketch of electromagnetic spectrum and describe different regions along with their range of wavelengths. (8)

12. (a) (i) What are the atmospheric windows? Mention the significance of atmospheric windows in the selection of sensors. (6)
- (ii) Describe the EMR interaction with water, soil and vegetation. (10)

Or

- (b) (i) Explain the synoptivity and repetivity nature of satellite remote sensing. Give examples. (8)
- (ii) Describe the various scattering of EMR and their effects. (8)
13. (a) (i) Discuss in detail about the orbital characteristics of IRS 1-D and SPOT satellites. (8)
- (ii) Explain the operational mechanism of Side Looking Airborne Radar (SLAR). (8)

Or

- (b) Write short notes on :
- (i) Sun-Synchronous and Geostationary satellites
- (ii) Multispectral scanner
- (iii) Along and Across track scanner
- (iv) Spatial and spectral resolution. (4 × 4 = 16)
14. (a) (i) Explain the various components of GIS. (8)
- (ii) Describe the processes of data input and editing. (8)

Or

- (b) (i) Compare and contrast digitization and scanning processes. (8)
- (ii) Explain buffering and reclassification with example. (4 + 4 = 8)

15. (a) (i) Describe any eight interpretation keys used for Visual interpretation of satellite imagery with one example for each. (12)
- (ii) Briefly write about image enhancement techniques. (4)

Or

- (b) (i) Explain the uses of remote sensing and GIS in water resource development. (10)
- (ii) Describe the digital image processing of satellite data. (6)

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