

Printed Pages : 3

ECE402

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 0022**

Roll No.

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B.Tech.

(SEMESTER-IV) THEORY EXAMINATION, 2012-13

**GEOINFORMATICS***Time : 3 Hours ]**[ Total Marks : 100***SECTION – A**

1. Attempt **all** question parts. **10 × 2 = 20**
- What is meant by platform in remote sensing ?
  - Define “spatial resolution”.
  - Explain fractional scale.
  - Define scattering of EMR.
  - What is spectral signature ?
  - How are satellites classified ?
  - Distinguish between spatial and non-spatial data.
  - List a few meteorological satellites.
  - What is a digital image ?
  - List some elements of image interpretation.

**SECTION – B**

2. Attempt any **three** question parts. **3 × 10 = 30**
- Explain with sketch the components of a remote sensing system.
    - Distinguish between a camera and sensor.
  - What are the atmospheric windows ? Mention the significance of atmospheric windows in the selection of sensors.

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- (c) Write notes on :
- (i) Sun-synchronous and geostationary satellites
  - (ii) Multispectral scanner
  - (iii) Along and across track scanner
  - (iv) Spatial and spectral resolution
- (d) Explain the various components of GIS.
- (e) Explain how satellite imagery can be used to estimate population distribution.

### SECTION – C

Attempt **all** questions.

**5 × 10 = 50**

3. Attempt any **two** parts.

**2 × 5 = 10**

- (a) Draw a neat sketch of electromagnetic spectrum and describe different regions along with their range of wavelengths.
- (b) Explain the following terms :
  - (i) Different types of platforms
  - (ii) Digital image data formats
- (c) Describe the EMR interaction with water, soil and vegetation.

4. Attempt any **one** part.

**1 × 10 = 10**

- (a) Explain the synoptivity and repetivity nature of satellite remote sensing. Give examples.
- (b) Describe the various scattering of EMR and their effects.

5. Attempt any **one** part.

**1 × 10 = 10**

- (a) Explain the orbital characteristics of satellites.
- (b) Explain the operational mechanism of Side Looking Airborne Radar (SLAR).

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6. Attempt any **one** part. **1 × 10 = 10**
- (a) Describe the processes of data input and editing.
  - (b) Compare and contrast digitization and scanning processes.
7. Attempt any **two** parts. **2 × 5 = 10**
- (a) Explain the elements of interpretation with an example for each one of them.
  - (b) Describe any eight interpretation keys used for visual interpretation of satellite imageries with one example for each.
  - (c) Explain the uses of remote sensing and GIS in water resources development.
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