Printed Pages : 3 ECE402

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

PAPER ID : 0022 Roll No. | | | | | | | | | | |

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**

(a) What is meant by platform in remote sensing ?

(b) Define "spatial resolution".

(c) Explain fractional scale.

(d) Define scattering of EMR.

(e) What is spectral signature ?

(f) How are satellites classified ?

(g) Distinguish between spatial and non-spatial data.

(h) List a few meteorological satellites.

(i) What is a digital image ?

(j) List some elements of image interpretation.

SECTION – B

2. Attempt any **three** question parts. **3 × 10 = 30**

(a) (i) Explain with sketch the components of a remote sensing system.

(ii) Distinguish between a camera and sensor.

(b) What are the atmospheric windows ? Mention the significance of atmospheric windows in the selection of sensors.

(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.