Seat No.:	Enrolment No
GUJARAT TECHNOLOGICAL UNIVERSITY	

BE - SEMESTER-VII • EXAMINATION - SUMMER • 2014 Subject Code: 170606 Date: 31-05-2014

Subject Name: Applications of Geo-informatics in Civil Engineering

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

Instructions:

- 1. Attempt all questions.
- Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Global Positioning System.

Q.1 Explain the active and passive remote sensing process. 07 (a) **(b)** What is a Spectral reflectance curve? Sketch the spectral reflectance curves for 07 vegetation, clear water, turbid water and wet soil. Define Photogrammetry. difference **Q.2** (a) **Explain** between Aerial 07 photogrammetry and terrestrial photogrammtery. **(b)** What are the key components of a GIS? List the commercially available GIS **07** softwares. OR Explain the functions of Geographic Information System. What are its **07 (b)** advantages over other mapping softwares? 0.3 (a) Explain the following terms of a remote sensing system (i) Spatial resolution 07 (ii) Spectral resolution and (iii) temporal resolution What are vector and raster data? What things can be represented by point, line, 07 **(b)** and polygon? Also list the vector and raster file formats. OR Explain the term 'Digital Image'. How is the satellite data recorded at the **Q.3** (a) **07** ground station? What are the elements of Visual Image Interpretation? **07 (b)** 0.4 Differentiate between raw data and processed data. What do you understand by 07 (a) geocoded data? What do you understand by ground-truthing of data? Write a short note on 07 **(b)**

OR

- **Q.4** Explain the terms Image enhancement and Contrast enhancement. Discuss the **07** (a) linear contrast enhancement of remotely sensed data.
 - Explain the various data sources of a Geographical Information System. **(b)**
- What do you understand by Image Classification? Differentiate between **Q.5 07** (a) supervised and unsupervised image classification.
 - Discuss the use of remote sensing in land use and land cover mapping. **(b)**

OR

- Explain the terms network tracing, network routing and network allocation **Q.5** (a) **07** with suitable examples? **07**
 - **(b)** Discuss the use of remote sensing, GIS and GPS in disaster management.

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