

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.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the active and passive remote sensing process. **07**
(b) What is a Spectral reflectance curve? Sketch the spectral reflectance curves for vegetation, clear water, turbid water and wet soil. **07**
- Q.2** (a) Define Photogrammetry. Explain the difference between Aerial photogrammetry and terrestrial photogrammetry. **07**
(b) What are the key components of a GIS? List the commercially available GIS softwares. **07**
- OR**
- (b) Explain the functions of Geographic Information System. What are its advantages over other mapping softwares? **07**
- Q.3** (a) Explain the following terms of a remote sensing system (i) Spatial resolution (ii) Spectral resolution and (iii) temporal resolution **07**
(b) What are vector and raster data? What things can be represented by point, line, and polygon? Also list the vector and raster file formats. **07**
- OR**
- Q.3** (a) Explain the term 'Digital Image'. How is the satellite data recorded at the ground station? **07**
(b) What are the elements of Visual Image Interpretation? **07**
- Q.4** (a) Differentiate between raw data and processed data. What do you understand by geocoded data? **07**
(b) What do you understand by ground-truthing of data? Write a short note on Global Positioning System. **07**
- OR**
- Q.4** (a) Explain the terms Image enhancement and Contrast enhancement. Discuss the linear contrast enhancement of remotely sensed data. **07**
(b) Explain the various data sources of a Geographical Information System. **07**
- Q.5** (a) What do you understand by Image Classification? Differentiate between supervised and unsupervised image classification. **07**
(b) Discuss the use of remote sensing in land use and land cover mapping. **07**
- OR**
- Q.5** (a) Explain the terms network tracing, network routing and network allocation with suitable examples? **07**
(b) Discuss the use of remote sensing, GIS and GPS in disaster management. **07**
