Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – SUMMER 2016

Subject Code:170606 **Date:05/05/2016**

Subject Name:Application of Geoinformatics in Civil Engineering (Department Elective-I)

Time:02:30 PM to 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)	What is remote sensing? Explain an ideal remote sensing.	07
	(b)	List the different remote sensing platforms. Mention the advantages and disadvantages of these platforms.	07
Q.2	(a)	What is photogrammetric surveying? List factors affecting selection of flying altitude.	07
	(b)	Determine the number photographs required to cover an area of 15km x 15km if the longitudinal overlap is 60% and the side overlap is 35%. The size of the photograph is 23cm x 23cm and the scale is 1 cm = 100 m.	07
		OR	
	(b)	What are the atmospheric windows? Write their significance.	07
Q.3	(a)	Explain different resolutions with their significance.	07
	(b)	Explain functioning and basic working principles of GPS.	07
		OR	
Q.3	(a)	Explain the basic Elements of Image Interpretation.	07
	(b)	Explain energy interaction with the Earth's surface. Discuss a spectral reflectance curve.	07
Q.4	(a)	Define GIS. What are the components of GIS? What is the concept of layers in GIS?	07
	(b)	Explain GIS Data types (i) Spatial data (ii) Attribute Data.	07
		OR	
Q.4	(a)	What is digital image processing? Differentiate between unsupervised classification and supervised classification.	07
	(b)	What are the various sources from which data can be derived to be used for GIS?	07
Q.5	(a)	Explain applications of Geoinformatics in urban growth studies	07
	(b)	What are the segments of GPS? Describe them briefly.	07
		OR	
Q.5	(a)	Explain applications of remote sensing and GIS in Land use and Land cover mapping.	07
	(b)	Discuss the advantages & disadvantages of vector and raster data.	07

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