Seat N	lo.: _	Enrolment No.	_	
		GUJARAT TECHNOLOGICAL UNIVERSITY		
		B. E SEMESTER – VII • EXAMINATION – WINTER 2012		
_	Subject code: 170606 Date: 28/12/2012			
Subj	Subject Name: Applications of Geoinformatics in Civil Engineering			
Time	Time: 10.30 am - 01.00 pm Total Marks: 70			
Instru	Instructions:			
		Attempt any five questions.		
		Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
	J.	rightes to the right indicate run marks.		
Q.1	(a)	What is remote sensing? Discuss multi-concept of remote sensing and briefly	07	
		discuss application of remote sensing in water pollution monitoring.		
	(b)	Define GIS and discuss various components of GIS.	04	
0.2	(c)	What is GPS? List applications of GPS in Civil Engineering.	03	
Q.2	(a)	What is photogrammetric surveying? Discuss types of photogrammetry and types of aerial photographs.	07	
	(b)	The ground length of a line AB is known to be 545 m and the elevations of A	07	
	(~)	and B are respectively 500 m and 300 m above MSL. On a vertical photograph	0.	
		taken with a camera having focal length of 20 cm include the images a and b of		
		these points, and their photographic co-ordinates are: $(x_a = +2.65 \text{ cm}, y_a = +$		
		1.36 cm); $(x_b = -1.92 \text{ cm}, y_b = +3.65 \text{ cm})$. The distance ab scaled directly from		
		the photograph is 5.112 cm. Compute the flying height above MSL. OR		
	(b)	State reasons for overlaps in photogrammetry and list factors affecting selection	07	
	(6)	of flying altitude. Also briefly discuss flight planning for aerial	07	
		photogrammetry.		
Q.3	(a)	Discuss Active and Passive remote sensing system. Also discuss IRS series	07	
		development for remote sensing in India.		
	(b)	Explain energy interaction with the Earth's surface. Discuss spectral reflectance	07	
		curves for vegetation, bare soil and water Land Use/Land Cover classes. OR		
Q.3	(a)	Discuss applications and importance of High resolution and SeaWiFS sensors.	07	
Q.S	(b)	11 0	07	
	()	visual image interpretation.		
Q.4	(a)	* *	07	
		enhancement technique for remote sensing data.		
	(b)	• •	07	
		i) Minimum Distance to Means,ii) Parallelepiped and		
		iii) Maximum Likelihood Classification		
		Also discuss accuracy assessment for remotely sensed image classification.		
		OR		
Q.4	(a)		07	
0.4	(1.)	and unsupervised classification.	07	
Q.4	(b)	Discuss various input data and types of output products in GIS.	07	
Q.5	(a)	Discuss spatial data structures and modeling surfaces in GIS.	07	
٠,٠	(b)	Discuss Network analysis and digital terrain visualization in GIS.	07	

Geoinformatics in assessment of damage occurred due to disasters.

application of Geoinformatics in LU/LC mapping.

Q.5

OR
(a) Discuss the terms Land Use (LU) and Land Cover (LC) and Discuss 07

(b) Enlists various types of Natural Disasters and state application of 07