Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 170606 Date: 29-11-2014

Subject Name: Applications of Geo-informatics in Civil Engineering

Time: 10:30 am - 01:00 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 an ideal remote sensing system with the help of a neat sketch and discuss multi-concept of remote sensing.	**07**
	(b)	Discuss four M's for which geographic information is used and explain vector data structure and raster data structure in GIS.	**07**
Q.2	**(a)**	Discuss flight planning for aerial photogrammetry and state the reasons for overlaps in photogrammetry.	**07**
	(b)	What is GPS? Discuss applications and advantages of GPS.	**07**
		OR	
	(b)	What is spectral reflectance curve? State its utility in remote sensing and draw spectral reflectance curve for bare soil and water.	**07**
Q.3	**(a)**	Discuss applications and importance of high resolution and SeaWiFS sensors.	**07**
	(b)	What do you mean by image interpretation? Discuss elements of visual image interpretation.	**07**
		OR	
Q.3	**(a)**	Explain the wave model of electromagnetic energy used for remote sensing with the help of a neat sketch.	**07**
	(b)	Explain step by step process of image processing in remote sensing.	**07**
Q.4	**(a)**	What do you mean by geospatial analysis? Why is it required? And describe vector overlay with examples.	**07**
	(b)	What do you understand by electromagnetic spectrum? And State the wave length regions along with their uses for remote sensing application.	**07**
		OR	
Q.4	**(a)**	Explain various network analysis techniques in GIS.	**07**
	(b)	What do you understand by digital image? Explain linear contrast enhancement of remotely sensed data.	**07**
Q.5	**(a)**	Discuss application of remote sensing in land use and land cover mapping.	**07**
	(b)	What are the advantages and limitations of remote sensing?	**07**
		OR	
Q.5	**(a)**	Discuss the use of remote sensing in disaster management.	**07**
	(b)	Write short note on image classification.	**07**

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