Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – SUMMER • 2015

Subject Code: 150606 **Date:15/05/2015**

Subject Name: Disaster Assessment Using Geospatial Techniques

Time: 02.30pm-05.00pm **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 fundamental steps in digital image processing.	**07**
	(b)	Discuss limitation of using GIS in disaster management.	**07**
Q.2	**(a)**	Define data encoding. Explain how data from various data sources are encoded for use in a GIS software.	**07**
	(b)	Write application of remote sensing.	**07**
		OR	
	(b)	Give an outline how remotely sensed data can be used in GIS software to assess the damage done due to cyclone.	**07**
Q.3	**(a)**	Describe across track scanning and along track scanning systems to produce 2D digital image of the surface briefly.	**07**
	(b)	Describe imaging with microwave radar.	**07**
		OR	
Q.3	**(a)**	Discuss the concept of active and passive microwave remote sensing. Explain the components of radar as an active microwave remote sensor.	**07**
	(b)	Explain ‘vector data model’ and ‘raster data model’ in GIS?	**07**
Q.4	**(a)**	What is resolution for sensor and pixel in image? Explain in detail spectral resolution and temporal resolution.	**07**
	(b)	Draw a sketch to explain how a remote sensing system works to capture data and transfer it to the user. State the specific practical application of the infra red region of the electromagnetic spectrum.	**07**
		OR	
Q.4	**(a)**	Explain the function of DBMS.	**07**
	(b)	Why is it necessary to find out errors of GPS? Explain atmospheric error and satellite clock error in detail.	**07**
Q.5	**(a)**	Write briefly the features and objectives of CARTOSAT, METSAT, and Chandrayan.	**07**
	(b)	Explain types of satellite orbits.	**07**
		OR	
Q.5	**(a)**	Explain basics of relief and rescue operation by disaster assessment.	**07**
	(b)	Write down type of GPS receivers and discuss basic components of generic receiver	**07**

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