Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2023

Subject Code:3164009 Date:10-07-2023

Subject Name:Remote Sensing and GIS

Time:10:30 AM TO 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.**
4. **Simple and non-programmable scientific calculators are allowed.**
5. **Draw technically labelled diagram as required.**

			MARKS
Q.1	**(a)**	Define (i) RS, (ii) GIS and (iii) GPS	**03**
	(b)	Explain the relationship between Albedo and Remote Sensing	**04**
	(c)	Differentiate between Active and Passive Sensors.	**07**
Q.2	**(a)**	Explain the term Color-infrared aerial photography and give one example.	**03**
	(b)	List the various types of Sensors, and mention the altitudes they typically operate at.	**04**
	(c)	Discuss Object-based image analysis (OBIA) for image classification in remote sensing	**07**
		OR	
	(c)	Differentiate between multi spectral and hyper spectral imagery.	**07**
Q.3	**(a)**	Write the full form of any three (i) HDOP, (ii) CIR, (iii) HEO, (iv) DEM, (v) SBAS	**03**
	(b)	Explain how trilateration is used in global positioning system.	**04**
	(c)	Differentiate between Raster and Vector data.	**07**
		OR	
Q.3	**(a)**	Define Ephemeris in context of GPS	**03**
	(b)	Explain semi-synchronous orbit for a satellite and its importance as compared to other orbits for a GPS	**04**
	(c)	Discuss the different types of GPS accuracy issues.	**07**
Q.4	**(a)**	Enumerate types of quantitative maps.	**03**
	(b)	Explain any two types of geometric transformation in short.	**04**
	(c)	Describe the Components of GPS in details	**07**
		OR	
Q.4	**(a)**	List the different map elements.	**03**
	(b)	Explain any four types of map projections in short.	**04**
	(c)	Explain geographic co-ordinate system used for spatial referencing	**07**
Q.5	**(a)**	Define Spatial Data.	**03**
	(b)	List the various capabilities and benefits of GIS	**04**
	(c)	Application of GPS for Cadastral Survey	**07**
		OR	
Q.5	**(a)**	Define (i) Latitude, (ii) Datum, and (iii) Meridians,	**03**
	(b)	List the various components of GIS	**04**
	(c)	Application of GIS in Water Resource Engineering	**07**

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