Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2024

Subject Code: 3151308 Date:23-05-2024

Subject Name: Basics of Remote Sensing & GIS

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.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	How RS is useful in environmental engineering field.	**03**
	(b)	Write Indian remote sensing satellite.	**04**
	(c)	Explain basic concepts and principles of remote sensing.	**07**
Q.2	**(a)**	What is the atmospheric window?	**03**
	(b)	Enlist the Types of Sensor.	**04**
	(c)	Enlist and explain elements of visual image interpretation,	**07**
		OR	
	(c)	Discuss in brief EMR energy interaction in atmosphere.	**07**
Q.3	**(a)**	Define Hyper-spectral Imaging.	**03**
	(b)	Give the classification of aerial photograph.	**04**
	(c)	Discuss the process of digital image processing.	**07**
		OR	
Q.3	**(a)**	Describe scale of photograph.	**03**
	(b)	Enlist the Types of Camera used in RS with suitable application.	**04**
	(c)	Discuss advantages and limitations of digital image interpretation and Visual image interpretation.	**07**
Q.4	**(a)**	Describe the requirements of Ground Truth Data.	**03**
	(b)	Enlist advantages and limitation of GIS	**04**
	(c)	Describe the working principle of Global Positioning System.	**07**
		OR	
Q.4	**(a)**	Explain the factors that affect spectral measurements?	**03**
	(b)	What are almanac and ephemeris data?	**04**
	(c)	Explain the segments of GPS in detail.	**07**
Q.5	**(a)**	Give the names of software of GIS and RS.	**03**
	(b)	Enlist and explain key components of GIS.	**04**
	(c)	Discuss application of RS in environmental impact assessment.	**07**
		OR	
Q.5	**(a)**	Define: Spectral reflectance curve	**03**
	(b)	Discuss about Thermal Remote Sensing.	**04**
	(c)	Discuss application of RS in hydrology.	**07**

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