GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3150617   **Date:22/01/2021**
Subject Name:Remote Sensing and GIS
Time:10:30 AM TO 12:30 PM   **Total Marks: 56**

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	(a)	Define Remote Sensing. Explain its advantages and limitations.	**03**
	(b)	What are raster and vector? Write the basic differences between raster and vector.	**04**
	(c)	What is resolution and pixel in image? Explain in detail spectral resolution and temporal resolution	**07**
Q.2	(a)	Enlist various data formats of digital image.	**03**
	(b)	Explain the principle of Remote Sensing.	**04**
	(c)	Explain the systems of image classification in remote sensing.	**07**
Q.3	(a)	Write a note on imaging sensors for digital image	**03**
	(b)	Write a note on active and passive remote sensing	**04**
	(c)	Explain the interaction Electromagnetic energy with the atmosphere in detail.	**07**
Q.4	(a)	Explain microwave remote sensing.	**03**
	(b)	Explain in brief different components of GIS.	**04**
	(c)	Describe briefly properties as well as classification of map projections	**07**
Q.5	(a)	Define metadata, attribute data & spatial data	**03**
	(b)	Give the salient features of cadastral, thematic and topographic maps.	**04**
	(c)	Explain 'vector data model' and 'raster data model' in GIS	**07**
Q.6	(a)	Describe the Fundamentals of GIS Analysis functions	**03**
	(b)	Explain the procedure of georeferencing in QGIS software	**04**
	(c)	Write salient features of remote sensing tool ENVI or ERDAS.	**07**

Q.7 **(a)** Explain the concept of "Overlay analysis".   03

(b) Discuss the features of Mapwindow GIS and Arc GIS.   04

(c) Explain the concept of quadrant counts and nearest neighbour analysis   07
with respect to GIS data processing

Q.8 **(a)** Write a note on reference co-ordinate systems   03

(b) Explain applications of digital terrain model   04

(c) Explain the role of GIS and RS in assessing the impact of floods.   07

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