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

Subject Code:2170606   **Date:19/01/2021**
Subject Name:Application of Geoinformatics in Civil Engineering
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 and explain principle of remote sensing	**03**
	(b)	Explain various components of Geographical Information System.	**04**
	(c)	Discuss spatial, spectral, temporal and radiometric resolutions in remote sensing.	**07**
Q.2	**(a)**	Differentiate between active remote sensing and passive remote sensing.	**03**
	(b)	Discuss benefits of GIS.	**04**
	(c)	Discuss types of photogrammetry and types of aerial photographs.	**07**
Q.3	**(a)**	What is multispectral remote sensing?	**03**
	(b)	Define and explain EDM.	**04**
	(c)	Explain following raster operations with diagram. 1) Filtering. 2) Buffering. 3) Over lay. 4) Identification of zones.	**07**
Q.4	**(a)**	What is registration of an image in GIS.	**03**
	(b)	Discuss the importance of microwave.	**04**
	(c)	Enlist various coordinate system and explain any one of them.	**07**
Q.5	**(a)**	What do you understand by geospatial analysis?	**03**
	(b)	Give classification of geospatial analysis.	**04**
	(c)	Explain applications of network tracing, network routing and network allocation in transportation studies using GIS.	**07**
Q.6	**(a)**	List open source and commercially available GIS soft wares.	**03**
	(b)	Discuss differentia GPS.	**04**
	(c)	Discuss contrast enhancement and principal component analysis for remote sensing images.	**07**
Q.7	**(a)**	What do you understand by image classification?	**03**
	(b)	Differentiate between supervised and unsupervised image classification.	**04**
	(c)	Explain the term "Digital Image ". How is the satellite data recorded at ground station?	**07**
Q.8	**(a)**	What do you understand by ground truth of data?	**03**
	(b)	Differentiate between raw data and processed data.	**04**
	(c)	What are the elements of visual image interpretation?	**07**

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