

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 differential 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
