

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3170617****Date:15/12/2021****Subject Name:Application of GIS in Civil Engineering****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.

		MARKS
Q.1	(a) Write a note on Co-ordinate systems used in GIS	03
	(b) Explain how GIS is useful in soil management	04
	(c) Discuss the planning of road network using GIS	07
Q.2	(a) Write few advantages of open-source GIS software 'QGIS'	03
	(b) Discuss application of GIS in storm water drainage network analysis	04
	(c) Explain the use of GIS to plan drainage upgrades by integrating terrain analysis with flooding information	07
OR		
	(c) Compare the salient features of ArcGIS and QGIS	07
Q.3	(a) Write a note on Map Scales	03
	(b) Write a note on Spatial Aggregation	04
	(c) What is spatial overlay operator? Explain neighbourhood functions being implemented in GIS software	07
OR		
Q.3	(a) Explain the procedure of Georeferencing in QGIS	03
	(b) List all the types of Data errors. Explain any two.	04
	(c) Describe hierarchical data structure and relational data structure for managing data	07
Q.4	(a) Explain concept of decision making in GIS modelling	03
	(b) Explain the difference between GIS model implementation and model testing	04
	(c) Describe cartographic communication process with its diagram	07
OR		
Q.4	(a) Explain metadata and metadata standards	03
	(b) Discuss the post-processing scenario of GIS software output.	04
	(c) Explain the web-based GIS system with example	07
Q.5	(a) Write a note on 'creating new data sets for software'	03
	(b) Explain dynamic visualization concept in GIS modelling	04
	(c) What do you mean by Digital surface model (DSM)? Explain its application with example	07
OR		
Q.5	(a) Enlist various spatial analyst tool commands used in ArcGIS	03
	(b) Explain the concept of analytical modelling in GIS	04
	(c) Discuss TIN and DEM giving their importance	07
