GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2022

Subject Code:3170617   **Date:10-01-2023**
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)**	What is GIS?	**03**
	(b)	Enlist the application areas of GIS in Civil Engineering.	**04**
	(c)	Explain how GIS can be utilized in Water Recourses Management.	**07**
Q.2	**(a)**	List out open-source GIS software.	**03**
	(b)	Define Geo-referencing and explain how to geo-reference a map using QGIS	**04**
	(c)	Write down full form of "QGIS" and salient feature of it.	**07**
		OR	
	(c)	How to carryout Terrain analysis using QGIS?	**07**
Q.3	**(a)**	Define metadata, attribute data and spatial data.	**03**
	(b)	What is difference between spatial and non spatial data?	**04**
	(c)	What is geo spatial analysis? Explain network analysis in detail.	**07**
		OR	
Q.3	**(a)**	Define Cadastral maps, Topographical maps and Thematic maps.	**03**
	(b)	Write a short note with sketch on "Types of Digitizing Errors in GIS"	**04**
	(c)	Describe the raster and vector data structures. What are the relative advantages and disadvantages of both data structures?	**07**
Q.4	**(a)**	Enlist various file formats of raster data.	**03**
	(b)	Explain linking of spatial and attribute data in GIS for further analysis.	**04**
	(c)	Write short note on: Buffering and Neighbourhood.	**07**
		OR	
Q.4	**(a)**	List out agency which provides free GIS data on internet.	**03**
	(b)	What do you mean by transformation and Why it is required?	**04**
	(c)	Give classification of map projection and explain cylindrical map projection in detail.	**07**
Q.5	**(a)**	What is a GIS Interface?	**03**
	(b)	Differentiate between TIN and DEM.	**04**
	(c)	Write short note on Triangulated irregular network.	**07**
		OR	
Q.5	**(a)**	What is GIS post processing?	**03**
	(b)	Explain use of GIS as decision making tool with example.	**04**
	(c)	Describe various types of buffers of reclassification process.	**07**

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