GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3170617   **Date:08-12-2023**
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)**	"GIS - The IT of Civil Engineering" Explain.	**03**
	(b)	List out various civil engineering project where GIS interface.	**04**
	(c)	Describe the application of GIS in flood hazard management with suitable example.	**07**
Q.2	**(a)**	What are the limitations of QGIS?	**03**
	(b)	Write few file formats supported by QGIS as per Raster and Vector.	**04**
	(c)	Compare the salient features of ArcGIS and QGIS	**07**
		OR	
	(c)	Describe the advantages and limitations of raster data model.	**07**
Q.3	**(a)**	How GIS tools useful for transportation and utility system?	**03**
	(b)	Explain any two types of errors associated with spatial data analysis	**04**
	(c)	Explain procedure of georeferencing in any GIS Software.	**07**
		OR	
Q.3	**(a)**	What is difference between spatial and non-spatial data?	**03**
	(b)	What are the different file formats used to store Raster data and Vector data?	**04**
	(c)	List out the GIS analysis functions. Describe an overlay analysis.	**07**
Q.4	**(a)**	Explain Neighborhood Operations.	**03**
	(b)	Enlist various spatial analyst tool commands used in ArcGIS	**04**
	(c)	State various input datasets required for Terrain Modelling. Give process steps for watershed delineation.	**07**
		OR	
Q.4	**(a)**	Differentiate between DEM and TIN.	**03**
	(b)	List out various GIS spatial data sources from internet.	**04**
	(c)	Briefly describe properties and classification of map projections	**07**
Q.5	**(a)**	What is a GIS Interface?	**03**
	(b)	Enlist various GIS software packages and explain one in detail.	**04**
	(c)	Explain the buffer in any feature class (Point, Line, and Polygon) and also explain its uses.	**07**
		OR	
Q.5	**(a)**	What do you mean by Digital surface model (DSM)?	**03**
	(b)	Explain use of GIS as decision making tool with example	**04**
	(c)	Elaborate the sentence "The growth of GIS has changed in the modern period of civil engineering project development".	**07**

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