Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–V • EXAMINATION – WINTER 2013

Subject Code: 650013 Date: 30-11-2013

Subject Name: Geographical Information System

Time: 02.30 pm - 05.00 pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Answer the following questions in short. **07**

(1) Which latitude passes from Gujarat State of India?

(2) What is main difference between Directed and Un-directed network?

(3) What is Sinuosity?

(4) What is Isoline?

(5) What is main difference between Centroid and Node?

(6) What is Fractal Geometry?

(7) How is Least Convex Hull method helpful for measuring polygon?

(b) Attempt the following.

(1) Briefly explain Trapezoidal Rule. **03**

(2) Briefly explain Inductive and Deductive Modeling. **02**

(3) List differences between Implementation Flowchart and Formulation Flowchart. **02**

Q.2 **(a)** Explain any two devices useful for input to GIS. **07**

(b) What is GPS? Explain the five methods of Raster Input. **07**

OR

(b) Explain seven basic categories of Metadata. **07**

Q.3 **(a)** Explain Nonlinear Interpolation methods in surface with types. **07**

(b) For polygon input, explain following terms with diagram wherever possible: **07**

(a) Dangling Node
(b) Undershoot
(c) Overshoot
(d) Clipping
(e) Snapping
(f) Sliver Polygon
(g) Weird Polygon

OR

Q.3 **(a)** Explain any four map projections and any three families of map projections. **07**

(b) Explain various types of buffers of reclassification process. **07**

Q.4 **(a)** What is difference between Area and Surface? How does Raster and Vector Systems store Point, Line and Area? Explain with suitable diagrams. **07**

(b) Explain any seven differences between Primary Data and Secondary Data. **07**

OR

Q.4 **(a)** Explain three point distribution patterns. Explain four spatial **07**

measurement levels.

	(b)	"For GIS photography, satellite is better than airplane and airplane is better than hand-held camera". Justify this statement.	**07**

Q.5	**(a)**	Write a detailed note on Gravity Model.	**07**
	(b)	What are 'Higher Level Objects'? With suitable diagrams, explain three types of Network and three types of Region.	**07**

OR

Q.5	**(a)**	Explain usefulness/applications of GIS.	**07**
	(b)	Explain various overlay methods used for comparing variables among maps.	**07**

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