Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA- Vth SEMESTER–EXAMINATION –JUNE - 2012

Subject code: 650013 **Date: 15/06/2012**

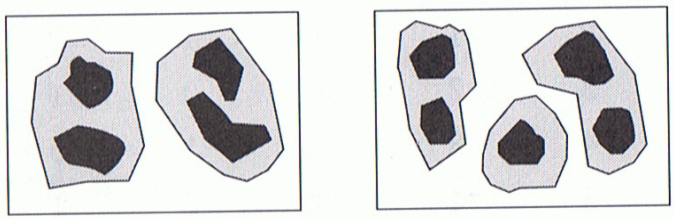
Subject Name: Geographical Information System (GIS)

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)**	i) Write a note on Buffers.	**04**
		ii) Explain the error situations when nodes remain hanging with figures.	**03**
	(b)	Draw chart of GIS coordinate transformations. Explain three basic processes necessary to make the projection transformations in detail by taking one basic shape polygon example in Cartesian coordinate system.	**07**
Q.2	**(a)**	Illustrate Vector Models in detail with all its types.	**07**
	(b)	Describe Metadata and Metadata standard with all its categories.	**07**
		OR	
	(b)	Describe MAP Projections in detail.	**07**
Q.3	**(a)**	What is Error in Digitizing Process? Explain Errors for Raster and Vector. Also explain the Rubber Sheeting.	**07**
	(b)	Explain about measurement of Polygons. Also give the example of same by considering any basic shape polygon.	**07**
		OR	
Q.3	**(a)**	Explain the methods of Raster input in detail.	**07**
	(b)	i) Calculate Euler numbers from the following figures.	**02**



ii) Calculate three high pass filtered brightness values [by putting the Filter Window (Fig. a) on given Matrix of brightness values (Fig. b)] by three move of filter on Original matrix. **05**

-1	-1	-1
-1	9	-1
-1	-1	-1

Fig. a

41	45	45	44	45
40	45	43	41	43
39	44	44	42	40

Fig. b

Q.4	**(a)**	Write a detail note on measuring Polygon Shape.	**07**
	(b)	Discuss Connectivity and circuitry of Linear Objects.	**07**
		OR	
Q.4	**(a)**	Explain Slicing the statistical surface with figure. Also explain Cut and fill method.	**07**
	(b)	Describe Point, line, Polygon overlay on Polygon in both Raster and Vector System.	**07**
Q.5	**(a)**	Explain Cartographic Output in detail.	**07**
	(b)	List methods of compacting raster data. Explain all.	**07**
		OR	
Q.5	**(a)**	Explain Cartographic Model with its type.	**07**
	(b)	Explain Non Cartographic Output in detail.	**07**

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