

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

MCA- V<sup>th</sup> 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**

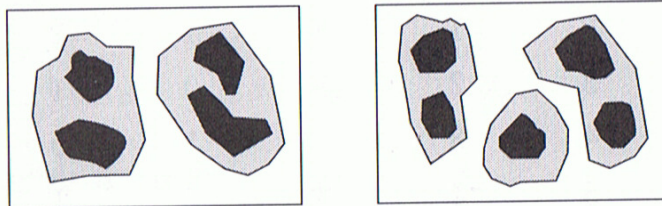
**OR**

- (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. **07**  
Also explain Cut and fill method.  
(b) Describe Point, line, Polygon overlay on Polygon in both Raster and Vector **07**  
System.
- 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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