Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY MCA - SEMESTER- V • EXAMINATION – SUMMER - 2017

Date:08/06/2017 Subject Code:650013 **Subject Name: Geographical Information System** Time: 02.30 PM TO 05.00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) List and explain GIS subsystems. **Q.1** 07 **(b)** Explain spatial measurement levels. Explain point distribution patterns. 07 **Q.2** What is map projection? Explain three families of map projections. 07 (a) Explain UTM and UPS. **07 (b)** OR (b) Explain grid-based and polygon-based methods for representing Point, Line and 07 Area data in GIS. 0.3 Explain higher level point and higher level line objects in detail. 07 (a) Explain measurement of linear objects for raster as well as vector data. 07 OR Explain friction surfaces and barriers in context of functional distance. **Q.3** (a) **07** 'Classification in GIS is re-classification and relative.' Justify the validity of **(b) 07** this statement. How is reclassification based on position done in GIS? Write a detailed note on **07** 0.4 (a) Buffer in GIS. (b) What is difference between Area and Surface in GIS? Explain the usage of 07 term 'Statistical Surface' in context of GIS. What is difference between Linear and Non-linear Interpolation? Explain types 0.4 07 (a) of Non-linear Interpolation in detail. (b) Explain usage of gamma index and alpha index for calculating connectivity. 07 **Q.5** Explain the terms: ITU, LCGU, Exclusionary Variables Overlay, Mathematical 07 (a) Variables Overlay, Selective Overlay, Identity Overlay and Boolean Overlay. **(b)** Explain the map design controls. 07 OR 07 **Q.5** (a) Explain any seven applications of GIS. (b) Explain the map design process. Explain non-traditional output and non-07 cartographic output.
