

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– 1 • EXAMINATION – WINTER - 2023

Subject Code:3716502**Date: 24 Jan 2024****Subject Name:Geo-informatics 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.

- Q.1** (a) Discuss energy interaction with the earth's surface and also discuss spectral reflectance curves for vegetation, water and bare soil. **07**
(b) What is remote sensing? Show diagrammatically and discuss an ideal remote sensing system. **07**
- Q.2** (a) What is a Geographical Information System? Explain the various components of a Geographical Information System. **07**
(b) List the commercially available and open source GIS software and explain any one in detail. **07**
- OR**
- (b) Differentiate between vector based and raster based GIS with suitable examples. **07**
- Q.3** (a) What is GPS? Discuss three segments of GPS. **07**
(b) Write short note on GPS applications in Transportation Engineering. **07**
- OR**
- Q.3** (a) Write short note on GPS applications in Construction Management. **07**
(b) Discuss the working principle of GPS with neat sketch. **07**
- Q.4** (a) List various contrast enhancement and filtering techniques. Discuss any one contrast enhancement and filtering technique. **07**
(b) Describe the Raster and Vector model with suitable example. **07**
- OR**
- Q.4** (a) Write short not on supervised classification of image. **07**
(b) What do you mean by NDVI and how carryout NDVI analysis? **07**
- Q.5** (a) Briefly describe Hierarchical Database Models **07**
(b) What is The Integrated Data Model explain in detail **07**
- OR**
- Q.5** (a) Explain Application of GIS in various Natural Resources Mapping **07**
(b) What is SQL? Explain in detail. **07**
