

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023****Subject Code:3151308****Date:13-12-2023****Subject Name:Basics of Remote Sensing & GIS****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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Define the term : **03**
1. Remote Sensing 2. Electromagnetic Spectrum 3. Reflectance
(b) Explain the interaction of EM energy with the atmosphere. **04**
(c) Discuss the advantages and limitations of Remote Sensing. **07**
- Q.2** (a) Explain Active Remote Sensing with example. **03**
(b) Discuss the classification of sensors. **04**
(c) Discuss the geometry for deriving scale of aerial photograph. **07**
- OR**
- (c) Explain Satellite Resolutions in detail. **07**
- Q.3** (a) Enlist and Explain any ONE parameter for Ground Truthing. **03**
(b) Explain the Ephemeris and Almanac data. **04**
(c) Discuss the working principle of Global Positioning System. **07**
- OR**
- Q.3** (a) Explain the application of GPS. **03**
(b) Differentiate between GPS and DGPS. **04**
(c) Enlist and explain any TWO errors of GPS in detail. **07**
- Q.4** (a) Explain the Thermal Remote Sensing. **03**
(b) Differentiate between Image and Photograph. **04**
(c) Enlist and explain any THREE elements of Visual Image Interpretation. **07**
- OR**
- Q.4** (a) Define the following terms: **03**
1. Thermal Capacity 2. Thermal Conductivity 3. Thermal Inertia
(b) Explain the steps for Image Interpretation. **04**
(c) Differentiate between Visual and digital image processing. **07**
- Q.5** (a) Define the term Geographical Information System (GIS). **03**
(b) Explain the applications of GIS. **04**
(c) Discuss the application of Remote Sensing for Environmental Impact Assessment (EIA). **07**
- OR**
- Q.5** (a) Define the Scale, Accuracy and Resolution of Maps. **03**
(b) Explain are the functions of GIS. **04**
(c) Discuss the application of Remote Sensing for Ocean and Coastal Monitoring. **07**
