

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024****Subject Code:3150617****Date:25-11-2024****Subject Name:Remote Sensing and 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 remote sensing. What are the Elements of Remote Sensing? | 03 |
| (b) | “RS & GIS - The IT of Civil Engineering” Explain. | 04 |
| (c) | What is Remote Sensing? Discuss Applications of RS/GIS in various field of Civil Engineering. | 07 |

- Q.2**
- | | | |
|-----|---|-----------|
| (a) | Explain about Temporal and Spatial resolution. | 03 |
| (b) | Differentiate supervised and unsupervised classification. | 04 |
| (c) | Discuss the Role of Spectral Reflectance Curves in Remote Sensing with Neat Sketch, including Spectral Reflectance of Soil, Water and Vegetation. | 07 |

OR

- | | | |
|-----|--|-----------|
| (c) | What is visual image interpretation? Describe elementsof visual image interpretation | 07 |
|-----|--|-----------|

- Q.3**
- | | | |
|-----|--|-----------|
| (a) | Explain error in GIS data. | 03 |
| (b) | What are the advantages and limitations of raster and vector data model? | 04 |
| (c) | Enlist various GIS and Remote sensing software packages and explain one from both in detail. | 07 |

OR

- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Explain in Detail: Electromagnetic Radiation. | 03 |
| (b) | Classify and explain various sensors in detail. | 04 |
| (c) | Describe about Digital image processing. | 07 |

- Q.4**
- | | | |
|-----|---|-----------|
| (a) | Enlist Input and Output Devices in GIS. | 03 |
| (b) | List out the GIS analysis functions. Describe an overlay analysis. | 04 |
| (c) | Differentiate between Active and Passive Sensor. Name any four sensors with their resolution. | 07 |

OR

- Q.4**
- | | | |
|-----|---|-----------|
| (a) | What is a projection? Explain the different types of map Projections. | 03 |
| (b) | What do you mean by attribute data? Write in detail. | 04 |
| (c) | Define GIS? Describe the components of GIS with suitable examples? | 07 |

- Q.5**
- | | | |
|-----|--|-----------|
| (a) | List out various GIS spatial data sources from internet. | 03 |
| (b) | Explain procedure of georeferencing in any GIS Software. | 04 |
| (c) | Describe the application of RS & GIS in the area of Town planning with suitable example. | 07 |

OR

- Q.5**
- | | | |
|-----|--|-----------|
| (a) | What are the important components of ISRO Bhuvan Geo-portal? | 03 |
| (b) | What are the different file formats used to store Raster data and Vector data? | 04 |
| (c) | Discuss Application of RS/GIS in Water Resources Management | 07 |
