

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2022****Subject Code:3151308****Date:13-01-2023****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.

MARKS

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|------------|---|-----------|
| Q.1 | (a) Define (i) Remote sensing (ii)GIS, (iii)GPS | 03 |
| | (b) What is Electromagnetic spectrum and EMR? | 04 |
| | (c) Explain the application of remote sensing in oceans and coastal monitoring. | 07 |
| Q.2 | (a) Differentiate active passive Remote sensing. | 03 |
| | (b) Enlist the sensors developed by India for remote sensing? | 04 |
| | (c) What are the considerations for an ideal remote sensing system? | 07 |
| | OR | |
| | (c) What are the advantages and limitation of visual image interpretation and digital image processing? | 07 |
| Q.3 | (a) Differentiate between photograph and image. | 03 |
| | (b) What is image interpretation? Discuss the process of image interpretation? | 04 |
| | (c) Explain need of introducing filters in RS. the types of filters used in RS | 07 |
| | OR | |
| Q.3 | (a) What are the procedures of deriving scale of photograph? | 03 |
| | (b) Explain interaction of incident EM energy with atmosphere. | 04 |
| | (c) Explain the role of remote sensing in agriculture. | 07 |
| Q.4 | (a) What is Hyper-spectral Imaging? | 03 |
| | (b) Differentiate between low oblique aerial photograph and high oblique aerial photograph. | 04 |
| | (c) Classify the sensors. Which sensors are used in remote sensing? | 07 |
| | OR | |
| Q.4 | (a) What is spectral reflectance curve? | 03 |
| | (b) Explain the parameters of ground truthing. | 04 |
| | (c) Describe GIS- as an information infrastructure. | 07 |
| Q.5 | (a) What are the requirements of ground truth data in remote sensing data analysis? | 03 |
| | (b) What are almanac and ephemeris data? | 04 |
| | (c) Define and highlight the role of functional segments of GPS. | 07 |
| | OR | |
| Q.5 | (a) What are the limitations of GIS? | 03 |
| | (b) Explain thermal image interpretation. | 04 |
| | (c) What are the errors introduced in GPS? Explain in brief. | 07 |
