

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-V EXAMINATION – WINTER 2025****Subject Code:3150617****Date:17-11-2025****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.

		<b>MARKS</b>
<b>Q.1</b>	(a) Draw a neat sketch of electromagnetic spectrum.	<b>03</b>
	(b) Differentiate between active and passive remote sensing.	<b>04</b>
	(c) Write a note on remote sensing data products.	<b>07</b>
<b>Q.2</b>	(a) Differentiate between analogue image and digital image.	<b>03</b>
	(b) Write a note on image classification.	<b>04</b>
	(c) Explain the interaction of EMR with the earth's surface.	<b>07</b>
<b>OR</b>		
	(c) Explain various data formats of digital image.	<b>07</b>
<b>Q.3</b>	(a) Explain various equipments used in digital image processing and explain anyone in detail.	<b>03</b>
	(b) Explain various components of GIS.	<b>04</b>
	(c) Explain the fundamentals of GIS data quality and management.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain why geo-referencing is required in GIS.	<b>03</b>
	(b) Describe briefly the classification of map projections.	<b>04</b>
	(c) Explain the procedure of data input and output in GIS.	<b>07</b>
<b>Q.4</b>	(a) Explain the use of reference coordination system in GIS.	<b>03</b>
	(b) Differentiate between vector data model and raster data model in GIS.	<b>04</b>
	(c) Explain the concept of buffering and neighborhood in GIS analysis.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Discuss the important characteristics of map coordinate systems.	<b>03</b>
	(b) Discuss the capabilities and limitations of Map Window GIS.	<b>04</b>
	(c) Describe the fundamentals of GIS analysis functions.	<b>07</b>
<b>Q.5</b>	(a) Briefly explain the importance of overlaying in GIS.	<b>03</b>
	(b) Enlist various softwares used for image interpretation and explain the salient features of anyone.	<b>04</b>
	(c) Explain the procedure of georeferencing in QGIS software.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Write a note on attribute data management.	<b>03</b>
	(b) Write the usefulness of GIS in civil engineering.	<b>04</b>
	(c) Explain the role of GIS and RS in Watershed management.	<b>07</b>

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