

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2021****Subject Code:3151308****Date:20/12/2021****Subject Name:Basics of Remote Sensing & GIS****Time:02:30 PM TO 05:00 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>	<b>(a)</b>	Define: (i) Remote sensing, (ii) GIS (iii) GPS	<b>03</b>
	<b>(b)</b>	Draw the schematic representation of Remote sensing process and enlist each step.	<b>04</b>
	<b>(c)</b>	What are the sensors developed by India for remote sensing?	<b>07</b>
<b>Q.2</b>	<b>(a)</b>	Define: Active Remote sensing and passive Remote sensing.	<b>03</b>
	<b>(b)</b>	What is image interpretation? Discuss the process of image interpretation?	<b>04</b>
	<b>(c)</b>	What are the advantages and limitation of visual image interpretation and digital image processing?	<b>07</b>
<b>OR</b>			
	<b>(c)</b>	Enlist the elements of visual image interpretation. Define the type of quality and quantity associated with respective elements.	<b>07</b>
<b>Q.3</b>	<b>(a)</b>	What is the need of introducing filters in RS? Enlist the types of filters used in RS.	<b>03</b>
	<b>(b)</b>	Explain scale of the photograph.	<b>04</b>
	<b>(c)</b>	Enlist the types of camera used in RS with its working principle and advantage?	<b>07</b>
<b>OR</b>			
<b>Q.3</b>	<b>(a)</b>	What is film? Enlist the types of film used in RS?	<b>03</b>
	<b>(b)</b>	Differentiate between low oblique aerial photograph and high oblique aerial photograph.	<b>04</b>
	<b>(c)</b>	What is the concept of thermal remote sensing?	<b>07</b>
<b>Q.4</b>	<b>(a)</b>	Enlist the key components of GIS with their role.	<b>03</b>
	<b>(b)</b>	What are the requirements of ground truth data in remote sensing data analysis?	<b>04</b>
	<b>(c)</b>	Explain the working principle of GPS?	<b>07</b>
<b>OR</b>			
<b>Q.4</b>	<b>(a)</b>	Enlist instruments used for ground truthing.	<b>03</b>
	<b>(b)</b>	What are almanac and ephemeris data?	<b>04</b>
	<b>(c)</b>	Highlight the role of remote sensing in environmental impact assessment	<b>07</b>

- Q.5** (a) Enlist the Application of remote sensing in Hydrology. **03**  
(b) Explain are the functions of GIS? **04**  
(c) Justify “GIS is an information infrastructure”. **07**
- OR**
- Q.5** (a) Explain the concept of thermal image interpretation. **03**  
(b) What are the limitations of GIS? **04**  
(c) Enlist the Application of remote sensing in ocean and coastal monitoring. **07**

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