

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:3150617****Date:22/01/2021****Subject Name:Remote Sensing and GIS****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Define Remote Sensing. Explain its advantages and limitations.	03
	(b) What are raster and vector? Write the basic differences between raster and vector.	04
	(c) What is resolution and pixel in image? Explain in detail spectral resolution and temporal resolution	07
Q.2	(a) Enlist various data formats of digital image.	03
	(b) Explain the principle of Remote Sensing.	04
	(c) Explain the systems of image classification in remote sensing.	07
Q.3	(a) Write a note on imaging sensors for digital image	03
	(b) Write a note on active and passive remote sensing	04
	(c) Explain the interaction Electromagnetic energy with the atmosphere in detail.	07
Q.4	(a) Explain microwave remote sensing.	03
	(b) Explain in brief different components of GIS.	04
	(c) Describe briefly properties as well as classification of map projections	07
Q.5	(a) Define metadata, attribute data & spatial data	03
	(b) Give the salient features of cadastral, thematic and topographic maps.	04
	(c) Explain 'vector data model' and 'raster data model' in GIS	07
Q.6	(a) Describe the Fundamentals of GIS Analysis functions	03
	(b) Explain the procedure of georeferencing in QGIS software	04
	(c) Write salient features of remote sensing tool ENVI or ERDAS.	07

- Q.7** (a) Explain the concept of “Overlay analysis”. **03**
- (b) Discuss the features of Mapwindow GIS and Arc GIS. **04**
- (c) Explain the concept of quadrant counts and nearest neighbour analysis with respect to GIS data processing **07**
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- Q.8** (a) Write a note on reference co-ordinate systems **03**
- (b) Explain applications of digital terrain model **04**
- (c) Explain the role of GIS and RS in assessing the impact of floods. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2021****Subject Code:3150617****Date:15/12/2021****Subject Name:Remote Sensing and 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.

Simple and non-programmable scientific calculators are allowed

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|-----|---|----|
| Q.1 | (a) Define Remote Sensing. | 03 |
| | (b) What are the disadvantages of Remote sensing? | 04 |
| | (c) Explain concept of remote sensing. | 07 |
| Q.2 | (a) What are the atmospheric window? | 03 |
| | (b) Explain the concept of orbital calendar. | 04 |
| | (C) Write short note on:Active and Passive Remote Sensor. | 07 |

OR

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|-----|--|----|
| | (c) What do you understand by 'map'? Differentiate between topographic And thematic map. | 07 |
| Q.3 | (a) What is resolution for sensor in Image? | 03 |
| | (b) What are the seven elements in remote sensing? | 04 |
| | (c) Explain different resolution with their significance. | 07 |

OR

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|-----|---|----|
| Q.3 | (a) Explain platform of remote sensing, | 03 |
| | (b) Explain image interpretation strategies. | 04 |
| | (c) Give brief idea about GSLV and PSLV | 07 |
| Q.4 | (a) What do you understand by GIS? | 03 |
| | (b) Explain various components of GIS? | 04 |
| | (c) Explain 'vector data model' and 'raster data model' in GIS. | 07 |

OR

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|-----|---|----|
| Q.4 | (a) Define Meta data, Attribute data, spatial data. | 03 |
| | (b) What are the advantages of GIS over map . | 04 |
| | (c) Explain input data for GIS and GIS products. | 07 |
| Q.5 | (a) Define data encoding. | 03 |
| | (b) Explain Georeferencing coordinate system. | 04 |

(c) Explain Error in GIS data and managing the errors. 07

OR

Q.5 (a) Explain surface modelling in GIS. 03

(b) Describe features of important GIS software packages. 04

(c) Write about the function of DBMS. 07

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2021****Subject Code:3150617****Date:07/09/2021****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.

MARKS

- Q.1**
- | | | |
|-----|--|-----------|
| (a) | Write the types of views a map can be visualised in GIS. | 03 |
| (b) | What are the requirements of ideal remote sensing? | 04 |
| (c) | Explain the terms; Re-projection and Geo-referencing. | 07 |

- Q.2**
- | | | |
|-----|---|-----------|
| (a) | Write any five file formats of raster data. | 03 |
| (b) | Differentiate Active and Passive Remote Sensing. | 04 |
| (c) | Draw sketch of EMR spectrum explain each bands application in different fields. | 07 |

OR

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|-----|---|-----------|
| (c) | Define Remote sensing and Explain Components of Remote sensing. | 07 |
|-----|---|-----------|

- Q.3**
- | | | |
|-----|--|-----------|
| (a) | Give a brief idea about GSLV and PSLV. | 03 |
| (b) | Explain air borne and space borne sensors. | 04 |
| (c) | Explain systematic errors in context of satellites examples. | 07 |

OR

- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Write the full forms of DEM, JPEG and GIF. | 03 |
| (b) | Name the different sources in India to obtain various spatial data. | 04 |
| (c) | Write any 10 different applications of GIS. | 07 |

- Q.4**
- | | | |
|-----|---|-----------|
| (a) | Define swath and explain the concept of orbital calendar. | 03 |
| (b) | Write any five tools (softwares) used in GIS. | 04 |
| (c) | Explain coordinate systems in GIS. | 07 |

OR

- Q.4**
- | | | |
|-----|---|-----------|
| (a) | Write any five file formats of vector data. | 03 |
| (b) | Discuss the features of important GIS software package. | 04 |
| (c) | Differentiate active & passive remote sensors. | 07 |

- Q.5**
- | | | |
|-----|--|-----------|
| (a) | Why geo-referencing is required in GIS? | 03 |
| (b) | Explain various applications of remote sensing and describe any two. | 04 |

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|-----|--|-----------|
| (c) | Write a note on Remote Sensing and its application to disaster management. | 07 |
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OR

- Q.5**
- | | | |
|-----|--|-----------|
| (a) | What is image enhancement? Discuss. | 03 |
| (b) | Explain different resolutions with their significance. | 04 |
| (c) | Give your views on image interpretation strategies. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V(NEW) EXAMINATION – SUMMER 2022****Subject Code:3150617****Date:02/06/2022****Subject Name:Remote Sensing and 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.

		MARKS
Q.1	(a) Write any five file formats of raster data.	03
	(b) Write any five tools (softwares) used in GIS.	04
	(c) Give your views on image interpretation strategies.	07
Q.2	(a) What do you mean by spatial data? Write in brief.	03
	(b) Differentiate active and passive remote sensing.	04
	(c) Write a note on EMR.	07
	OR	
	(c) Write a note on interaction of EMR with earth's surface.	07
Q.3	(a) Write the types of views a map can be visualised in GIS.	03
	(b) Differentiate supervised and unsupervised classification.	04
	(c) Write about different sensors in accordance to remote sensing.	07
	OR	
Q.3	(a) Define swath and explain the concept of orbital calendar.	03
	(b) What are the different components of GIS? Explain in brief.	04
	(c) Write a note on image processing systems.	07
Q.4	(a) Give a brief idea about GSLV and PSLV.	03
	(b) Give a brief introduction of a digital image.	04
	(c) Explain the characteristics of different coordinate systems in GIS.	07
	OR	
Q.4	(a) Why geo-referencing is required in GIS?	03
	(b) What is the significance of overlaying? Write in brief.	04
	(c) Explain Buffering and Neighborhood as a GIS analysis function.	07
Q.5	(a) Write any five file formats of vector data.	03
	(b) How do you differentiate public domain softwares with other softwares available in GIS? Explain with examples	04
	(c) Discuss in detail about any two case-studies of applications of remote sensing and GIS in the field of civil engineering.	07
	OR	
Q.5	(a) Write the full forms of GIF, DEM and JPEG.	03
	(b) What do you mean by attribute data? Write in detail.	04
	(c) Write about the applications of GIS in different field of civil engineering in detail.	07
