Code No: R1941013 **R19** **Set No. 1**

IV B. Tech I Semester Regular Examinations, November – 2022
REMOTE SENSING & GIS
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
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UNIT-I

1	a)	Illustrate the Elements of remote sensing.	[7]
	b)	Outline the energy interaction with surface features.	[8]
		(OR)	
2	a)	What are the advantages and limitations of Lands at imagery?	[7]
	b)	What is sensor? Classify the sensors based on their functions.	[8]

UNIT-II

3	a)	Explain the typical entire process of digital image processing.	[7]
	b)	Explain the following elements of visual image interpretation: (i) Location (ii) Size (iii) Shape and (iv) Shadow.	[8]
		(OR)	
4	a)	Explain briefly the categories of image classifications used and distinguished among each other	[7]
	b)	Discuss overlay using a decision table.	[8]

UNIT-III

5	a)	What do you understand by spatial data and how are they integrated to make a GIS?	[7]
	b)	Write the advantages and disadvantages of vector data structures.	[8]
		(OR)	
6		What do you understand by spatial analysis? Why is it required? Mention any two spatial analysis techniques.	[15]

UNIT-IV

7	a)	Explain the remote sensing studies in geological application.	[7]
	b)	Explain the remote sensing application in land use and land cover studies	[8]

(OR)

8	a)	Explain the importance of remote sensing data for geomorphological application.	[7]
	b)	Explain methodology with flow chart RS & GIS techniques to urban planning application.	[8]

UNIT-V

9		Explain the application of remote sensing in flood zone mapping.	[15]

(OR)

10	a)	Write the applications of remote sensing in ground water prospects.	[7]
	b)	Describe the application of remote sensing in watershed management studies.	[8]

Code No: R1941013 **R19** **Set No. 2**

IV B. Tech I Semester Regular Examinations, November – 2022
REMOTE SENSING & GIS
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
*****

UNIT-I

1	a)	Explain Atmospheric windows of Electromagnetic spectrum.	[7]
	b)	What is resolution of a sensor? Describe all sensor resolutions	[8]
		(OR)	
2	a)	Mention the IRS satellites with their sensor characteristics.	[7]
	b)	Explain in detail about the various elements of visual image interpretation.	[8]

UNIT-II

3	a)	What is visual interpretation? What are the basic elements to be considered during visual interpretation of satellite images?	[7]
	b)	Explain digital image processing in detail.	[8]
		(OR)	
4	a)	Explain the concept of network analysis.	[7]
	b)	Write difference between supervised vs unsupervised classification	[8]

UNIT-III

5	a)	Expand GIS. Write about the components of GIS in brief.	[7]
	b)	Explain the fundamental operations of GIS.	[8]
		(OR)	
6	a)	List out the data input and output devices used in GIS and explain briefly.	[7]
	b)	Write the advantages and disadvantages of Raster data structures.	[8]

UNIT-IV

7	a)	Write the application of RS and GIS in transportation.	[7]
	b)	Explain the role of remote sensing in agriculture.	[8]

(OR)

8		Explain the remote sensing and GIS applications developing urban, forestry and geology informations.	[15]

UNIT-V

9		Explain the importance and application of remote sensing in ground water studies.	[15]

(OR)

10	a)	Elucidate the role of remote sensing for Watershed Management.	[7]
	b)	List out and explain the essential data input layers generated from remote sensing for groundwater potential zoning.	[8]

Code No: R1941013 **R19** **Set No. 3**

IV B. Tech I Semester Regular Examinations, November – 2022
REMOTE SENSING & GIS
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
*****

UNIT-I

1	a)	List out the various advantages and disadvantages of remote sensing.	[7]
	b)	Describe the Interaction of Electromagnetic Radiation with Earth Surface Features.	[8]
		(OR)	
2	a)	What are the advantages and disadvantages of various remote sensing platforms?	[7]
	b)	Discuss the following (i) Band interleaved by pixel (ii) Band interleaved by line	[8]

UNIT-II

3	a)	What are image interpretation keys? Explain.	[7]
	b)	What is supervised classification? What are the basic steps and stages involved in a typical supervised classification?	[8]
		(OR)	
4	a)	Explain network tracing, network routing and network allocation.	[7]
	b)	Explain the Vector overlay operation.	[8]

UNIT-III

5	a)	What is a map? Explain the classifications of a map.	[7]
	b)	Define GIS. Describe the key components of GIS	[8]
		(OR)	
6	a)	Explain the types of data representation in GIS.	[7]
	b)	Discuss about logical operations	[8]

UNIT-IV

7	a)	Give the details of the sensor requirements for forestry applications	[7]
	b)	Describe the applications of Remote Sensing and GIS in agriculture	[8]

(OR)

8 a) Discuss how GIS and RS can be useful to improve the road traffic management in a metropolitan city. [7]

b) Discuss the various Urban applications of Remote Sensing and GIS. [8]

UNIT-V

9 a) What are the GIS layers developed for watershed characterization? Explain [7]

b) Mention the specific resolution needs in flood zone mapping and discuss the methodology used in such studies. [8]

(OR)

10 Explain the applications of remote sensing in ground water prospects and potential recharge zones. [15]

Code No: R1941013 **R19** **Set No. 4**

IV B. Tech I Semester Regular Examinations, November – 2022
REMOTE SENSING & GIS
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
*****

UNIT-I

1	a)	Illustrate the Electro Magnetic Spectrum (EMS) and write the wavelength regions important to remote sensing.	[7]
	b)	List out the different types of atmospheric scattering and write its effect on remote sensing.	[8]
		(OR)	
2	a)	Write the sensor characteristics of SPOT.	[7]
	b)	Explain in detail about the airbore remote sensing and space bore remote sensing.	[8]

UNIT-II

3	a)	Give comparison between visual interpretation and image classification.	[7]
	b)	Explain about (a) Image enhancement (b) Image classification	[8]
		(OR)	
4	a)	What is raster overlay? Explain with suitable examples.	[7]
	b)	Explain Point-in-polygon overlay, Lineon-polygon overlay, Polygon-on-polygon overlay.	[8]

UNIT-III

5	a)	Explain the importance and applications of GIS.	[7]
	b)	Explain how spatial data and attribute data integrated to make a GIS	[8]
		(OR)	
6	a)	Differentiate vector data and raster data.	[7]
	b)	Explain about (a) data manipulation (b) data retrieval.	[8]

UNIT-IV

7	a)	What are the remote sensing requirements for land use/ land cover mapping?	[7]
	b)	Write the special needs of sensors for geological studies.	[8]

(OR)

8	a)	Explain the Remote sensing applications in traffic management.	[7]
	b)	Discuss the role and advantages of Remote Sensing and GIS in Land Use and Land Cover Mapping.	[8]

UNIT-V

9	a)	Give an account on satellite data requirements for flood zone mapping?	[7]
	b)	Explain the applications of remote sensing in potential recharge zones.	[8]

(OR)

10		Explain the role of geospatial technology for ground water quality mapping.	[15]