

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*

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 Landsat imagery? [7]
b) What is sensor? Classify the sensors based on their functions. [8]

UNIT-II

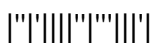
- 3 a) Explain the typical entire process of digital image processing. [7]
b) Explain the following elements of visual image interpretation: [8]
(i) Location (ii) Size (iii) Shape and (iv) Shadow.
(OR)
- 4 a) Explain briefly the categories of image classifications used and distinguished among each other [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? [15]
Mention any two spatial analysis techniques.

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]



Code No: R1941013

R19

Set No. 1

(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 [8]
interpretation.

UNIT-II

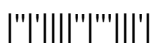
- 3 a) What is visual interpretation? What are the basic elements to be [7]
considered during visual interpretation of satellite images?
b) Explain digital image processing in detail. [8]
(OR)
- 4 a) Explain the concept of network analysis. [7]
b) Write difference between supervised vs unsupervised classification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

JNTU FAST UPDATES



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]



Code No: R1941013

R19

Set No. 3

(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]



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 airborne remote sensing and space borne 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, Line-on-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]



Code No: R1941013

R19

Set No. 4

(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]

