

Code No: 157EZ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, February - 2025****REMOTE SENSING AND GIS
(Common to ME, ECE, AE, MIE)****Time: 3 Hours****Max.Marks:75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What is Digital Image Processing? [2]
- b) What are the basic elements of Visual Image Interpretation? [3]
- c) What do you mean by map transformation? [2]
- d) What are the components of GIS? [3]
- e) What is attribute data? [2]
- f) Define Topology and Coverage. [3]
- g) What is vector data analysis? [2]
- h) Define Buffers and its utility with examples. [3]
- i) What are the GIS layers needed for road network planning? [2]
- j) List business applications using GIS. [3]

PART – B**(50 Marks)**

- 2.a) Explain the different platforms available for data collection in Remote Sensing.
 - b) Draw and explain the spectral signature curves for soil, vegetation and water. [5+5]
- OR**
- 3.a) With neat sketch explain the different elements involved in RS process.
 - b) With neat sketch explain the Electromagnetic Spectrum with wave length ranges. [5+5]
- 4.a) Discuss the different data inputting methods into GIS.
 - b) Discuss the different operations performed in GIS. [5+5]
- OR**
- 5.a) Explain the process of registration of Map to Map and Map to Image.
 - b) Discuss the advantages and disadvantages of Vector GIS & Raster GIS. [5+5]
- 6.a) Discuss how Relational Database Management System works?
 - b) Explain hierarchical data base structure with their uses. [5+5]
- OR**
- 7.a) What are Indexed files? Explain the advantages over order sequential files.
 - b) Differentiate between Raster data structure and Vector data structure. [5+5]

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- 8.a) Differentiate between manual digitization and automatic digitization.
- b) Discuss the various types of errors occur during digitization with sketches. [5+5]

OR

- 9.a) Explain the methodology of linking spatial data with attribute data. [5+5]
- b) Briefly discuss the spatial data interpolation techniques.

- 10.a) What are the system requirements needed for implanting a GIS in state level Road Infrastructure development Unit?

- b) Discuss the use of RS& GIS in hazard Zonation mapping. [5+5]

OR

- 11.a) Explain how GIS will help in finding shortest route in road network planning. [5+5]
- b) Discuss the use of RS& GIS in Mineral mapping.

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