

25U279S

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Name :

Reg. No :

SECOND SEMESTER UG DEGREE EXAMINATION, APRIL 2026

(FYUGP)

CC24UGEL2MN101 - GEOINFORMATICS - II

(Geology - Minor Course)

(2024 Admission - Supplementary/Improvement)

Time: 2.0 Hours

Maximum: 70 Marks

Credit: 4

Part A (Short answer questions)

Answer *all* questions. Each question carries 3 marks.

1. Explain what is meant by spectral resolution and how it influences the data obtained from remote sensing sensors. [Level:2] [CO1]
2. List three differences between aerial photographs and satellite imageries in terms of resolution, coverage, and application. [Level:2] [CO2]
3. Explain how SONAR technology works and identify one key application in remote sensing. [Level:2] [CO3]
4. List the main components of the GPS system and briefly explain how it determines a user's position on Earth. [Level:2] [CO6]
5. Describe the significance of metadata in GIS data models and discuss one key element that should be included in metadata. [Level:2] [CO5]
6. Explain how GPS technology enhances the accuracy and efficiency of field data collection compared to traditional surveying methods. [Level:2] [CO5]
7. Define a sun-synchronous satellite and discuss its significance in spaceborne remote sensing. [Level:1] [CO3]
8. Define a topographical map and explain its primary features used in remote sensing. [Level:2] [CO3]
9. Describe one advantage of using edge matching in GIS and provide an example of its application. [Level:2] [CO5]
10. List and briefly describe the two main classifications of sensors based on the nature of the output signal they provide. [Level:1] [CO1]

(Ceiling: 24 Marks)

Part B (Paragraph questions/Problem)

Answer **all** questions. Each question carries 6 marks.

11. Explain how data integrity and quality are maintained in a GIS. [Level:1] [CO5]
12. Explain why Sun-synchronous orbits are preferred for Earth observation satellites that monitor environmental changes. Discuss one advantage and one limitation of using this type of orbit compared to geosynchronous orbits. [Level:2] [CO3]
13. List and describe three key differences between GPS and GAGAN in terms of their functionality and applications. Provide examples of specific use cases for each system. [Level:2] [CO6]
14. Explain the network data model and how it differs from the hierarchical data model. [Level:2] [CO5]
15. Compare and contrast the hierarchical, network, and relational database models in the context of GIS data management. [Level:2] [CO5]
16. List the key differences between raster and vector data models in GIS. [Level:1] [CO5]
17. Explain what orbital eccentricity is and how it affects the shape of a satellite's orbit. Describe the differences between circular, elliptical, and highly eccentric orbits using examples. [Level:1] [CO3]
18. Explain the primary difference between push broom and whiskbroom scanners in terms of data acquisition methods. Discuss the impact of these differences on the quality and type of data collected in remote sensing applications. [Level:2] [CO1]

(Ceiling: 36 Marks)

Part C (Essay questions)

Answer any **one** question. The question carries 10 marks.

19. Define data editing in the context of GIS and describe the common types of errors that can occur in spatial data. [Level:1] [CO5]
20. Discuss the advantages and applications of hyperspectral imaging in various fields. [Level:2] [CO2]

(1 × 10 = 10 Marks)
