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Name : ....

Reg. No : ....

SECOND SEMESTER UG DEGREE EXAMINATION, APRIL 2025

(FYUGP)

CC24UGEL2MN101 - GEOINFORMATICS - II

(Geology - Minor Course)

(2024 Admission - Regular)

Time: 2.0 Hours

Maximum: 70 Marks

Credit: 4

Part A (Short answer questions)

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

1. Define spatial resolution in remote sensing and explain its significance. [Level:2] [CO1]

2. Define the raster data model in GIS and describe its primary characteristics. [Level:2] [CO4]

3. Explain how hyperspectral imaging enhances material identification compared to traditional imaging methods. [Level:2] [CO2]

4. Define a topographical map and explain its primary features used in remote sensing. [Level:2] [CO3]

5. Define GNSS (Global Navigation Satellite System) and state its primary purpose in global navigation. [Level:2] [CO6]

6. Describe the significance of metadata in GIS data models and discuss one key element that should be included in metadata. [Level:2] [CO5]

7. Define GNSS (Global Navigation Satellite System) and state its primary purpose in global navigation. [Level:2] [CO6]

8. Explain the advantages of using satellite imagery for environmental monitoring compared to traditional aerial photographs. [Level:2] [CO2]

9. List three key components of a GIS data management system and briefly describe their roles. [Level:2] [CO5]

10. Describe LiDAR technology and discuss how it differs from traditional RADAR systems. [Level:2] [CO3]

(Ceiling: 24 Marks)

Part B (Paragraph questions/Problem)

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

11. List the basic steps involved in correcting errors in GIS data. [Level:1] [CO5]

12. Describe geosynchronous satellites and their primary use in remote sensing. Discuss one key difference between Sun-synchronous and geosynchronous satellites, providing examples of remote sensing applications suited for each orbit type. [Level:2] [CO3]

13. Define the semi-major axis in the context of Keplerian orbits and explain its significance. Provide an example of how the semi-major axis influences the orbital period of a satellite. [Level:2] [CO3]

14. Define the hierarchical data model and describe its primary characteristics. [Level:1] [CO5]

15. Define rubber sheeting in GIS and explain its primary use. [Level:1] [CO4]

16. Compare and contrast traditional surveying methods with modern GPS-based surveying techniques. [Level:2] [CO5]

17. Describe what a geosynchronous orbit is and explain its primary use in remote sensing. Provide an example of how geosynchronous satellites are utilized in weather monitoring or communications. [Level:2] [CO3]

18. Explain the differences between active and passive sensors, including how they operate. Provide an example of each type and describe one key application for each. [Level:1] [CO1]

(**Ceiling: 36 Marks**)

Part C (Essay questions)

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

19. Discuss the techniques and applications of data reduction, generalization, and transformation in GIS. Provide examples of how these processes are used in various GIS projects. [Level:2] [CO6]

20. Define the main components of remote sensing sensors and explain their functions [Level:1] [CO1]

(**1 × 10 = 10 Marks**)

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