

**21I903**

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Name: .....

Reg. No: .....

**NINTH SEMESTER M.Sc. INTEGRATED GEOLOGY DEGREE EXAMINATION,  
NOVEMBER 2025**

(CBCSS)

(Regular/Supplementary/Improvement)

**CC20GLO9IB21 - ADVANCED REMOTE SENSING AND GEOGRAPHIC  
INFORMATION SYSTEM**  
(Geology)  
(2020 Admission onwards)

Time : Three Hours

Maximum : 80 Marks

Credit : 4

*(Draw neat sketches, wherever necessary)*

**PART – A**

Answer any **ten** question. Each question carries 2 marks.

1. What is optical remote sensing?
2. Explain the term "temporal resolution" in digital images.
3. What is geometric correction in image processing?
4. Define multispectral remote sensing.
5. Name one material that has a distinct spectral signature in the visible range.
6. What is thermal remote sensing?
7. Compare the spectral resolution of multispectral and hyperspectral sensors.
8. State the principle of RADAR.
9. Scatterometer.
10. Explain Quantile.
11. Define Overlying.
12. Describe the Find Sinks and Fill Sinks.

**(10 × 2 = 20 Marks)**

**PART – B**

Answer any **five** question. Each question carries 8 marks.

13. Discuss the different type of sensors.
14. Why is SWIR important for geological studies? Provide examples of mineral detection.
15. Explain the role of dielectric constant in determining radar backscatter.
16. Describe the concept of map algebra.
17. Describe any four types of Overlay methods in GIS.

18. Explain the morphometric analysis in relief aspect.
19. Describe the uses of resource mapping.

**(5 × 8 = 40 Marks)**

### **PART – C**

Answer any ***two*** question. Each question carries 10 marks.

20. Elaborate in detail the principle of remote sensing and types of satellite of satellite images.
21. Write an essay on hyperspectral sensing.
22. Discuss the significance of amplitude, polarization, and phase of return signals in microwave sensing.
23. Explain the different sources of DEM data. Compare their strengths and limitations in hydrological applications.

**(2 × 10 = 20 Marks)**

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