

**May 2025**  
**M.Sc.**  
**Fourth Semester**  
**CORE – 12**  
**GEOLOGY**  
*Course Code: MGLC 4.21*  
**(Remote Sensing & GIS)**

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. What are the principles that govern how remote sensing works? 14
2. Write a note on each of the following: 7×2=14
  - (a) Across track and along track sensors
  - (b) Electromagnetic energy

**UNIT-II**

3. Discuss the geometry of aerial photography. Explain how the orientation of the camera, lens system, and projection method influence the interpretation of aerial photographs. 7+7=14
4. Write a note on each of the following: 7×2=14
  - (a) Photogrammetric workflow
  - (b) Stereoscopic viewing

**UNIT-III**

5. Discuss major satellite exploration programs and their key characteristics. 14
6. Write a note on each of the following: 7×2=14
  - (a) KOMPSAT
  - (b) METEOSAT

## UNIT-IV

7. Describe radiometric and geometric corrections in digital image processing. Why are they necessary? 10+4=14
8. Write a note on each of the following: 7×2=14
- (a) Supervised and unsupervised classification
  - (b) Interpreting lithology from satellite data

## UNIT-V

9. Explain the basic concepts of GPS. Discuss its applications in Earth system sciences. 7+7=14
10. Write a note on each of the following: 7×2=14
- (a) Spatial analysis
  - (b) Datum

---