

**Question Paper Code : 40581**

**B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024.**

**Fifth/Sixth Semester**

**Electronics and Communication Engineering**

**CEC 348 — REMOTE SENSING**

**(Common to : Electronics and Telecommunication Engineering)**

**(Regulations 2021)**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

**PART A — (10 × 2 = 20 marks)**

1. Define Stefan's Boltzmann law.
2. Mention the four radiation quantities.
3. Define atmospheric scattering.
4. Write the energy balance equation.
5. What are sun-synchronous satellites?
6. Mention the cause of orbital perturbations.
7. Write the purpose of calibrating the sensors.
8. State the differences between thermal sensors and microwave sensors.
9. List the types of image classification.
10. Define photographic interpretation.

PART B -- (5 × 13 = 65 marks)

11. (a) Explain with neat sketch the components of remote sensing.
- Or
- (b) (i) Explain with neat sketch the Electromagnetic spectrum. (7)  
(ii) Describe the types of radiation sources. (6)
12. (a) Explain with a neat diagram the spectral reflectance characteristics of water, soil and vegetation.
- Or
- (b) Describe the main atmospheric regions and its characteristics.
13. (a) Compare ground based remote sensing platforms, space borne and airborne platform.
- Or  
www.EnggTree.com
- (b) Describe sun synchronous and geosynchronous satellites.
14. (a) Explain with neat sketch Along and across track scanners.
- Or  
EnggTree.com
- (b) Explain spatial, temporal and spectral resolution.
15. (a) Discuss the basic elements to be considered during visual interpretation satellite image.
- Or
- (b) Explain the various types of image rectification.

PART C — (1 × 15 = 15 marks)

6. (a) Explain the principles and applications of high resolution sensors.
- Or
- (b) Explain the process of principal component transformation and Fourier transform approaches to image enhancement and analysis.