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B.E. / B.Tech (Part Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2013

CIVIL ENGINEERING BRANCH

SIXTH SEMESTER – (REGULATIONS 2002)

PTCE051 PRINCIPLES OF REMOTE SENSING

Time: 3hrs

Max Marks: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. Write short note on different types of resolutions.
2. What is scale? Write short note in different types of scale.
3. What do you understand by the term "atmospheric windows"?
4. What are the factors affecting spectral reflectance of materials?
5. Distinguish between different types of scanning methods used by the satellite sensors to acquire the image of earth.
6. Differentiate between sun synchronous and Geo synchronous orbits.
7. What do you mean by SNR? What are its significance?
8. Write short note on Cathode Ray Tube (CRT).
9. Differentiate between passive and active microwave sensors.
10. What are the advantages of microwave data over other optical sensor data.

Part B (5 x 16 = 80)

11. i) What are the merits and demerits of conventional and remote sensing approaches? 4
 - ii) Explain the EMR diagram with neat sketch in detail. 12
 - 12a i) Describe in detail the interaction of radiation with atmosphere. 16
- (OR)
- 12b i) Discuss in detail the EMR interaction with the earth material. 16

(PTO)

13a. Describe in detail working principles and characteristics of any one of the remote sensing satellite and its payload. 16

(OR)

13b.i) What do you mean by stereovision? Discuss it in detail? 4

ii) Discuss in detail the working principles of Airborne platforms and their payloads 9

iii) List out any two high resolution sensors and write their characteristics. 3

14a.i) What is calibration? Discuss in detail different methods of calibrating the thermal scanners. 8

ii) Discuss in detail about Charge Couple Device (CCD) and Return Beam Vidicon. 8

(OR)

14b.i) Discuss in detail the working principles of different thermal scanners 10

ii) Differentiate between optical and thermal sensors 6

15a.i) Explain in detail the working principles of Side Looking RADAR (SLR) and Synthetic Aperture RADAR (SAR) 16

(OR)

15b Discuss the following in detail

i) Interferometry 8

ii) Altimetry 8