



Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH (ECE-N)/SEM-8/EC-804 D/2011

2011

REMOTE SENSING

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any **ten** of the following :

$$10 \times 1 = 10$$

- i) Remote sensing is the non-contact recording of information from the
 - a) Ultraviolet region
 - b) visible region
 - c) Infrared and microwave region
 - d) All of these.
- ii) GIS stands for
 - a) General information system
 - b) Geographic information system
 - c) Greyscaling information system
 - d) GSAT information system.



- iii) LIDAR stands for
 - a) Light Detection And Ranging
 - b) Light Detection Amplification Ranging
 - c) Lineament Detection And Ranging
 - d) Lattice Detection And Ranging.
- iv) In thermal remote sensing, sensors record objects emitted energy. How much energy is radiated can be expressed by
 - a) Stefan-Boltzmann law b) Plank's law
 - c) Snell's law d) Kepler's third law.
- v) Imaging and non-imaging are related to
 - a) Passive microwave sensors
 - b) Active microwave sensors
 - c) Both Active and passive microwave sensors
 - d) None of these.
- vi) A passive microwave sensor is
 - a) RMSR b) MSMR
 - c) SMSR d) MMSR.
- vii) Photogrammetric process is related to
 - a) acquisition of imagery b) Processing the imagery
 - c) Both (a) and (b) d) none of these.
- viii) Digital image processing is the application of algorithms on digital images to perform
 - a) processing and analysis
 - b) analysis and information extraction
 - c) Processing and information extraction
 - d) processing, analysis and information extraction.



- ix) Online GIS, also referred to as
- a) Web-based GIS
 - b) Internet GIS
 - c) Both (a) and (b)
 - d) none of these.
- x) For day and night data collection we use
- a) LIDAR
 - b) Photogrammetry
 - c) Both (a) and (b)
 - d) Radargrammetry.
- xi) Examples of hydrological applications are
- a) wetlands mapping and monitoring
 - b) water quality monitoring
 - c) soil moisture estimation
 - d) all of these.
- xii) World Wide Web and GIS uses the web to integrate modified GIS software through
- a) extensions and java programming
 - b) multimedia authoring software
 - c) visual basic software
 - d) database management system.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Explain Doppler broadening.
3. What do you understand by digitizing of films ?



4. Explain about atmospheric sensors in digital imaging.
5. Explain about airborne versus space-borne radars.
6. Explain thermal remote sensing system.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Briefly explain remote sensing process. Explain wave model of EMR. What is electromagnetic spectrum ? $7 + 3 + 5$
8. What do you understand by digital image ? Describe passive microwave remote sensing. What are the requirements of ground data in remote sensing data analysis ? $6 + 6 + 3$
9. What is orthorectification ? Explain the process in brief. What do you understand by multi-spectral remote sensing system ? What do you understand by 'integration of multimedia and GIS' ? $(2 + 4) + 4 + 5$
10. What do you understand by multiapproach of image analysis ? Explain the role of remote sensing to monitor land-use changes. Explain the application of remote sensing in ocean and coastal monitoring. $4 + 5 + 6$
11. Write short notes on any *three* of the following : 3×5
 - a) SONAR
 - b) Radargrammetry
 - c) Role of shadow to measure height
 - d) ISODATA clustering
 - e) Multitemporal.