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 rediated 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.