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Name:	(4)
Roll No. :	A Spanner (VE monthly 2nd Exclusion)
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.

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- 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

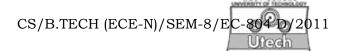
b) MSMR

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.

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- 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?

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 $3 \times 15 = 45$ 

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

#### GROUP - C

## (Long Answer Type Questions) Answer any *three* of the following.

Briefly explain remote sensing process. Explain wave model

- 7. of EMR. What is electromagnetic spectrum? 7 + 3 + 5
- What do you understand by digital image? Describe passive 8. 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 4 + 5 + 6in ocean and coastal monitoring.
- 11. Write short notes on any three of the following:  $3 \times 5$ 
  - SONAR a)
  - b) Radargrammetry
  - Role of shadow to measure height c)
  - d) ISODATA clustering
  - e) Multitemporal.

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