[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2066)

16106(J) June-16

**B. Tech 6th Semester Examination**

**Remote Sensing and GIS (NS)**

**CE-300(d)**

**Time : 3 Hours** **Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Candidates are required to attempt five questions in all by selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the question no. 9 in the section E.

## SECTION - A

1. (a) Discuss different classifications of remote sensing and comment on their comparative advantages and disadvantages. (10)

   (b) What are the different types of scattering? How the scattering phenomenon affects remote sensing process? (10)

2. (a) What do you understand from active and passive remote sensing? List different commonly used sensors in each category and comment on their relative advantages and disadvantages. (10)

   (b) Discuss the comparative advantages and disadvantages of Airborne and spaceborne remote sensing. (10)

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## SECTION - B

3. (a) Explain in brief about various visual image interpretation keys used in remote sensing. (10)

   (b) What do you understand from the pre-processing of digital remotely sensed data? Explain in brief about its steps. (10)

4. (a) Differentiate between the Band sequential (BSQ) and Band interleave (BIL) data formats used in digital image processing. (10)

   (b) What do you understand from supervised classification of remotely sensed digital images? Explain in brief about different methods used for it. (10)

## SECTION - C

5. (a) Explain in brief about different types of map projections used in GIS. (10)

   (b) Differentiate between the raster and vector GIS and explain their comparative advantages and disadvantages. (10)

6. (a) Differentiate between the spatial and non-spatial data and discuss their relative advantages and disadvantages. (10)

   (b) How scale is defined in a GIS data? Explain the procedural steps for it. (10)

## SECTION - D

7. (a) Explain the basic process and instrumentation for the vector GIS data entry and storage. (10)

   (b) What are the different modes of the digitization of a map in GIS? Explain about the digitization accuracy parameters. (10)

8. (a) Explain the raster data models used in the storage and analysis of GIS data. (10)

   (b) Explain in brief the utility of GIS data for Highways alignment studies. (10)

## SECTION - E

9. (a) Explain the following terms:

   - Ground Swath in remote sensing data acquisition
   - False Color Composite (FCC) image
   - Radiometric correction in digital image processing
   - Geospatial Data
   - Geodatabase (2×5=10)

   (b) Differentiate between the following terms:

   - Spectral and Spatial Resolution in remote sensing
   - Active and Passive remote sensing
   - Supervised and unsupervised image classification
   - Digitization and scanning
   - TIN model and GRID model in GIS (2×5=10)