Code No: **RT41015** **R13** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, October/November - 2019

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) Define scattering and what is its effect on remote sensing? [4]
   b) Differentiate between supervised and unsupervised classification. [3]
   c) Differentiate between raster and vector data models. [4]
   d) What are the various raster overlay operations used in GIS? [4]
   e) What are the engineering and military applications of Digital terrain models? [4]
   f) What is the role of GIS in flood proof zoning? [3]

PART–B *(3x16 = 48 Marks)*

2. a) Briefly explain how the remote sensing may be used to differentiate between different components of the atmosphere. [8]
   b) With a neat sketch briefly explain different types of scattering which occurs when EMR interacts with the atmosphere? [8]

3. a) What is unsupervised classification? Write about the advantages and disadvantages of unsupervised classification. [8]
   b) Discuss about the key elements of visual image interpretation. [8]

4. a) Explain with neat sketch about any two Raster Data Compaction Techniques. [8]
   b) Discuss various sources of data input methods which are used in GIS. [8]

5. a) Explain the concept of 'Optimum Path finding' in Network analysis. [8]
   b) Explain various arithmetic operations with examples. [8]

6. a) Using a flow chart discuss how GIS can be used to monitor the Land uses and land cover changes in urban areas. [8]
   b) What is geomorphology? Discuss the role of RS and GIS in geomorphological applications. [8]

7. a) Discuss how integrated watershed management strategies if implemented properly would be helpful in controlling the urban floods? [8]
   b) Draw a flow chart for preparation of site suitability map for water harvesting structures in urban areas. [8]