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

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018
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) Write a short note on In situ data and Electromagnetic Radiation. [4]
   b) What are the advantages of human image interpretation and digital image processing? [4]
   c) List out the key components of Geographic Information system. [3]
   d) Write a short note on Spatial data analysis. [4]
   e) Write a short note on land use and land cover. [4]
   f) How remote sensing and GIS helps in modern life. Explain in brief. [3]

PART–B *(3x16 = 48 Marks)*

2. a) What do you understand by remote sensing? Briefly explain remote sensing process. [8]
   b) Explain wave model of electromagnetic radiation. What is electromagnetic spectrum? [8]

3. a) Explain the following elements of visual image interpretation:
      (i) Location　　　(ii) Size　　　(iii) Shape and　　　(iv) Shadow. [8]
   b) Explain the typical entire process of digital image processing. [8]

4. a) Define GIS. Describe the key components of GIS. [8]
   b) Explain the importance and applications of GIS. [8]

5. What do you mean by Vector overlay? Explain Point-in-polygon overlay, Line-on-polygon overlay, Polygon-on-polygon overlay. [16]

6. Explain the remote sensing application in land use and land cover studies. [16]

7. Explain the importance and application of remote sensing in ground water studies. [16]

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R13

Set No. 2

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018
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) Discuss in brief active remote sensing and passive remote sensing.   [4]
   b) Write a short note on texture and pattern associated with interpretation
      elements.   [4]
   c) What do you mean by Geoinformatics?   [3]
   d) What do you mean by Containment and Adjacency?   [4]
   e) List the applications of remote sensing and GIS in hydrological applications.   [4]
   f) What do you mean by Burn mapping?   [3]

PART–B *(3x16 = 48 Marks)*

2. a) Explain the following terms related to interaction with atmosphere
      (i) Absorption (ii) Scattering (iii) Rayleigh Scattering (iv) Mie Scattering.   [8]
   b) What is resolution of a sensor> Describe various types of sensors used in
      remote sensing.   [8]

3. a) Explain the tone, colour, texture and pattern relating to elements of visual
      interpretations.   [8]
   b) Explain image enhancement, image magnification and image reduction.   [8]

4. What do you understand by spatial data and how are they integrated to make a
   GIS?   [16]

5. Explain the concept of network analysis? Explain network tracing, network
   routing and network allocation.   [16]

6. Explain the importance of remote sensing data for geomorphological
   application.   [16]

7. Explain the application of remote sensing in flood zone mapping.   [16]

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Code No: **RT41015** **R13** Set No. 3

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018
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) Discuss in brief nominal spectral resolution. [3]
    b) Write a short note on Site, shape and size adjectives that are associated with interpretation elements. [4]
    c) What do you mean by spatial entity and topology? [4]
    d) Write a short note on query b pixel value and attribute. [4]
    e) Write a short note on applications of GIS in land use changes. [4]
    f) Write a short note on mapping applications of remote sensing. [3]

PART–B *(3x16 = 48 Marks)*

2. a) Explain the terms (i) Raman Scattering (ii) Non-selective scattering (iii) Refraction (iv) Reflection. [8]
    b) Explain in detail about the airbore remote sensing and space bore remote sensing. [8]

3. a) Explain Height, depth, site, situation and association relating to elements of visual interpretation. [8]
    b) What are the differences between supervised and unsupervised classification? [8]

4. What are raster data models and vector data models? Write the basic differences between raster and vector data models. [16]

5. Explain arithmetic operations, logical operations and conditional expression of spatial data analysis. [16]

6. Explain the remote sensing studies in geological application. [16]

7. Explain the application of remote sensing in watershed management studies. [16]

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Set No. 4

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018
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) Write a short note on Path radiance and Directional reflection. [4]
    b) Discuss the role of shadow to measure height. [3]
    c) Define Isoline and Contour. [3]
    d) What do you mean by point-in-polygon overlay and line-on-polygon overlay? [4]
    e) Discuss in brief Exogenetic systems. [4]
    f) What do you mean by digital elevation models and planimetry? [4]

PART–B *(3x16 = 48 Marks)*

2. Explain in detail the energy interaction with the earth surfaces and characteristics of remote sensing systems. [16]

3. a) What are the advantages and limitations of visual image interpretation and digital image processing? [8]
    b) What do you understand by visual image interpretation? Explain in brief. [8]

4. a) Explain the term GIS. What are the applications of GIS? [8]
    b) Explain the terms (i) Field based raster model (ii) object based raster model. [8]

5. What do you understand by spatial analysis? Why is it required? Mention any two spatial analysis techniques. [16]

6. Explain the remote sensing and GIS applications developing urban, forestry and geology informations. [16]

7. Explain the applications of remote sensing in ground water prospects and potential recharge zones. [16]

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