Code No: **R41014** **R10** **Set No. 1**

IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Explain the procedure in measurement of parallax for height. [8]
   b) Discuss the advantages and disadvantages of Remote Sensing. [7]

2. a) Distinguish Active and Passive Remote Sensing. [8]
   b) Explain
      (i) Geo Synchronous Satellite
      (ii) Polar Synchronous Satellite [7]

3. a) What are the types of energy reflections based on Terrain Characteristics? [8]
   b) Describe spectral reflectance properties of clear water, vegetation/leaf, and dry soil in the visible through Near Infrared region of Electro Magnetic spectrum. [7]

4. a) What are the Key components of GIS? [8]
   b) What are the fundamental operations in Geographic Information System? [7]

5. a) Tabulate the advantages and disadvantages of vector and raster data. [10]
   b) What is the significance for projection and transformation? [5]

6. What is DEM (digital elevation model)? How is it generated? Give some applications of DEM. [15]

7. a) Briefly explain the Watershed model in GIS. [8]
   b) Explain Land use / Land cover mapping and its advantages in GIS. [7]

8. Explain the identification of sites for artificial recharge structures for ground water development using Remote Sensing & GIS techniques. [15]

Code No: **R41014** **R10** **Set No. 2**

IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Explain in detail the concept of stereoscopic parallax in Aerial Photography. [8]
   b) Explain in detail spectral reflectance curve of vegetation, water, soil. [7]

2. Explain the following data formats
   a) Band Interleaved by Pixel [BIP] [5]
   b) Band Interleaved by Line [BIL] [5]
   c) Band Sequential [BSQ] [5]

3. a) What are the image elements used for visual interpretation of satellite data? [10]
   b) Explain False Colour Composite in detail. [7]

4. a) Explain any two Vector data models in detail. [8]
   b) Discuss about different types of Map Projections. [7]

5. Give notes on
   a) Overlay analysis [5]
   b) Network Analysis [5]
   c) Proximity analysis [5]

6. Explain the concept of 'Optimum Path finding' in Network analysis. [15]

7. Explain the application of Remote Sensing and GIS in land use/land cover studies with flow chart. [15]

8. Explain the application of remote sensing and GIS in reservoir sedimentation in detail with flow chart. [15]

Code No: **R41014** **R10** **Set No. 3**

IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Write about the elements of Remote Sensing with necessary diagrams. [8]
   b) List the types of Aerial Photographs. Explain the uses and advantages of Aerial photographs in Remote sensing. [7]

2. a) Describe Electro Magnetic Spectrum with supporting diagram. Explain the significance of Electro Magnetic bands in Remote Sensing. [8]
   b) What are the different types of sensors? [7]

3. a) Explain briefly on energy interactions with atmosphere [8]
   b) List and explain various elements in Visual Interpretation of Satellite Image. [7]

4. a) Explain the Components of Geographic Information System. [8]
   b) Discuss the advantages and merits of GIS over conventional maps. [7]

5. Give schematic representations for
   (a) Linkage of four M's of GIS [5]
   (b) Hardware components of GIS [5]
   (c) Workflow process of GIS [5]

6. Explain Vector overlay & Raster Overlay concepts with respective example. [15]

7. Explain the drought impact assessment and monitoring using Remote Sensing and GIS techniques. [15]

8. Explain Hydrological applications using Remote Sensing & GIS techniques. [15]

Code No: **R41014** **R10** **Set No. 4**

IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Explain the components of a remote sensing system with a neat sketch. [8]
   b) Give notes on the steps involved in manual procedure for generation of a Photo mosaic. [7]

2. Explain in detail about the concept of Sensor resolution and its importance. [15]

3. Explain the following:
   (a) Spatial resolution
   (b) Spectral resolution
   (c) Radiometric resolution
   (d) Temporal resolution [15]

4. a) Briefly explain any two applications of Geographic Information System. [8]
   b) What is a Spatial data & Non Spatial data? Compare them both. [7]

5. a) Explain the types of Raster models in Geographic Information System. [10]
   b) List the disadvantages of Raster data & Vector data in GIS. [5]

6. What is procedure used for Edge matching of adjacent spatial data set? Explain the problems involved. [15]

7. Discuss Remote Sensing & GIS applications in Crop Health Monitoring. [15]

8. Explain the procedure of Ground Water recharge estimation using Remote Sensing & GIS techniques. [15]