Code No: M0123 **R07** **Set No. 1**

IV B.Tech. I Semester Regular Examinations, November, 2012
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) Explain different types of aerial photographs
   b) What are the major advantages of digital images over traditional hard copy images?

2. Explain in detail basic concepts and foundation of remote sensing

3. a) Explain about spatial, spectral and temporal resolution
   b) Write short notes on energy interactions with atmosphere.

4. a) Explain the basic concept of GIS
   b) Explain various advantages of GIS

5. Using examples explain different types of queries used in GIS

6. Explain various procedures / models for storage of vector and raster data in GIS

7. How remote sensing and GIS is used in land use/land cover studies. Explain in detail with flow chart.

8. Explain in detail with flow chart, application of remote sensing and GIS in identification of sites for artificial recharge structures.

Code No: M0123 **R07** **Set No. 2**

IV B.Tech. I Semester Regular Examinations, November, 2012
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) Write a brief note on stereoscopic parallax
   b) Explain with a neat sketch the components of a remote sensing system.

2. a) What is the electromagnetic spectrum?
   b) Differentiate radiance and irradiance

3. Write down the wave length and applications of the following regions of electromagnetic spectrum.
   i. Visible
   ii. Infrared.
   iii. Reflected IR band
   iv. Thermal IR

4. Explain the following with a suitable example.
   i. Buffering.
   ii. Overlaying a polygon theme with a point theme
   iii. Overlying a line theme with a polygon theme.
   iv. Reclassification

5. List and explain any two vector data models.

6. Explain the following advanced tools of GIS analysis along with suitable examples
   i. Proximity analysis
   ii. Spatial operation
   iii. Terrain analysis
   iv. Network analysis

7. Explain along with a flow chart how remote sensing and GIS is useful for the preparation of drought assessment and monitoring steps for a given state.

8. Explain in detail with flow chart, application of remote sensing and GIS in reservoir sedimentation.

Code No: M0123 **R07** **Set No. 3**

IV B.Tech. I Semester Regular Examinations, November, 2012
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) Explain the necessity of ground control points for aerial photography
   b) Describe the procedure for parallax measurements for height.

2. Explain in detail elements involved in remote sensing

3. a) What are instruments used for visual image interpretation and transfer of data
   b) Differentiate between visual image interpretation and digital image interpretation.

4. Explain the following
   i. Manual digitization and its advantages and disadvantages over automatic digitization.
   ii. Rubber sheeting

5. Give schematic representations for
   i. Linkage of four M's of GIS
   ii. Hardware components of GIS
   iii. Workflow process of GIS

6. Explain various procedures / models for storage of vector and raster data in GIS

7. Explain in detail with flow chart, application of remote sensing and GIS in flood impact assessment and monitoring.

8. Explain in detail with flow chart, application of remote sensing and GIS in water resources management and monitoring.

Code No: M0123 **R07** **Set No. 4**

IV B.Tech. I Semester Regular Examinations, November, 2012
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) List out various advantages and disadvantages of remote sensing
   b) List various photogrammetric activities and explain any one in detail.

2. a) What is the electromagnetic spectrum?
   b) Differentiate radiance and irradiance

3. Explain the following .
   i. Vector GIS
   ii. Raster GIS

4. Write down the wave length and applications of the following regions of electromagnetic spectrum.
   i. Visible
   ii. Infrared.
   iii. Reflected IR band
   iv. Thermal IR

5. Write detailed note on:
   i. Geographical entities
   ii. Topology. Also give four examples for each.

6. Explain the following advanced tools of GIS analysis along with suitable examples
   i. Proximity analysis
   ii. Spatial operation
   iii. Terrain analysis
   iv. Network analysis

7. Explain in detail application of remote sensing and GIS in watershed management.

8. Explain in detail with flow chart, application of remote sensing and GIS in water depth estimation and bathymetry.