Code No: M0123

R07

Set No.1

IV B.Tech I Semester Supplementary Examinations, February/March 2011
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 hours   **Max. Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. (a) Explain different types of aerial photographs
   (b) Explain with a neat sketch the components of a remote sensing system.

2. With a neat sketch explain basic components of an ideal remote sensing system.

3. (a) Explain the levels of interpretation keys
   (b) List and explain in brief various application of aerial photo interpretation

4. Explain the following
   (a)   Manual digitization and its advantages and disadvantages over automatic digitization.
   (b)   Rubber sheeting

5. Describe the following
   (a)   Layer based GIS mapping
   (b)   Feature based GIS mapping

6. Explain the following advanced tools of GIS analysis along with suitable examples
   (a)   Proximity analysis   (c)   Spatial operation
   (b)   Terrain analysis   (d)   Network analysis

7. Explain how GIS and remote sensing techniques are used in flood and drought impact assessment.

8. Explain in detail along with a flow chart, how RS and GIS can be applied for the preparation of stage –capacity curves of a reservoir.

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R07

Set No.2

IV B.Tech I Semester Supplementary Examinations, February/March 2011
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 hours   **Max. Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. (a) Explain image parallax in photogrammetry
   (b) Distinguish between a camera and sensor.

2. Explain energy interaction with earth surface features. Sketch the spectral reflectance of vegetation, soil and water.

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

4. (a) Define GIS along with its inbuilt subsystems.
   (b) Explain various advantages of GIS

5. Explain various procedures / models for storage of vector and rater data in GIS

6. Explain data collection, data input, data manipulation and data output modules in GIS

7. Explain how GIS and remote sensing techniques are used in watershed management for sustainable development

8. Explain how Remote sensing and GIS techniques are used in water resources management and monitoring

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R07

Set No.3

IV B.Tech I Semester Supplementary Examinations, February/March 2011
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time: 3 hours   **Max. Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. (a) List out various advantages and disadvantages of remote sensing
   (b) Describe the procedure for parallax measurements for height.

2. Explain the following
   (a) Energy interactions in the atmosphere
   (b) Energy interactions with earth surface features.

3. Explain in detail basic elements of image interpretation

4. What step would you take to limit the introduction of errors in
    (a) the digitizing and (b) the scanning of spatial data?

5. With a neat sketch describe raster and vector data representation

6. (a) What are the various elements in GIS application software
   (b) List out some of the major international GIS vendors

7. Explain how GIS and remote sensing techniques are used in land use and
    land cover studies

8. Explain how Remote sensing and GIS techniques are used in identification of
    sites for artificial recharge structures for ground water development.

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Set No.4

IV B.Tech I Semester Supplementary Examinations, February/March 2011
REMOTE SENSING AND GIS APPLICATIONS
(Civil Engineering)

Time : 3 hours   **Max. Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. (a)Write a brief note on stereoscopic parallax
   (b)What are the major advantages of digital images over traditional hard copy
       images?

2. Explain the following earth resources satellite
   (a) LANDSAT
   (b) NOAA

3. (a) Explain the basic character of digital image
   (b) What do you mean by image registration?

4. List various image enhancement techniques and explain each in detail.

5. Explain data collection, data input, data manipulation and data output modules in GIS

6. With an example each, explain the following:
   (a)   Buffering.
   (b)   Overlaying a polygon theme with a point theme
   (c)   Overlying a line theme with a polygon theme.
   (d)   Reclassification.

7. Explain how GIS and remote sensing techniques are used in determining runoff potential
   indices of watershed

8. Explain in detail along with a flow chart, how RS and GIS can be applied for the
   estimation of surface area of surface water bodies in a given study area.