Code No: 07A70401 **R07** **Set No. 2**

IV B.Tech I Semester Examinations,NOVEMBER 2010
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. Write down the wave length and applications of the following regions of electromagnetic spectrum.
   (a) Visible.
   (b) Infrared.
   (c) Reflected IR band.
   (d) Thermal IR. [16]
2. (a) Discuss the basis for identifying groundwater recharge sites.
   (b) Can remote sensing & GIS help in this? [8+8]
3. Explain in detail the significance of
   (a) Four M′s of GIS with the help of a schematic representation.
   (b) GIS categories. [16]
4. Explain the following vector models:
   (a) GBF/DIME model.
   (b) POLYVRT model. [16]
5. What are some possible advantages and disadvantages of using a raster GIS as opposed to vector? [16]
6. A stereo pair was taken with a 148mm camera from a flying height of 1250m above mean sea level. The air base at the time of exposure was 380m. Photo base b on the left photo was measured as 94.38mm and b on the right photo was measured as 94.02mm. With the photos properly oriented, parallax bar readings were taken on the left and right photo principal points O_1 and O_2 . The results were 10.21 and 10.65mm. Parallax bar readings of 9.66 and 14.26mm were also taken on two unknown points A and B. The photo coordinates of A and B were measured in the flight axis system of the left photo as x_a = 49mm, y_a = 43mm, x_b = 86mm and y_b = 42.34mm. Determine the elevations of points A and B and the horizontal length of line AB. [16]
7. How flood can be estimated traditionally and how remote sensting and GIS is useful for the prediction of flood. [16]
8. (a) List out any eight elements of visual image iterpretation.

(b) Explain any two methods of search in visual image interpretation. [8+8]

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Code No: 07A70401 **R07** **Set No. 4**

IV B.Tech I Semester Examinations,NOVEMBER 2010
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) What are the advantages of surface water bodies mapping using remote sensing satellite data?
   (b) How stream flow is measured? Explain your answer with example. [8+8]
2. (a) How do you do morphometric analysis of a watershed?
   (b) How remote sensing & GIS help in this? [8+8]
3. Write any eight differences between across track and along track scanner systems. [16]
4. Since we're mostly going to use software, not program it, why do we need to know about basic computer file structures, database structures, and graphic data structures? [16]
5. Explain the following vector models:
   (a) TIGER model.
   (b) POLYVRT model. [16]
6. Write short notes on:
   (a) Topology
   (b) Attributes
   (c) Geographical entities.
   Give three examples for each. [16]
7. Write any eight differences between active and passive remote sensing systems. [16]
8. Compare air photographs versus topographic maps for the following points.
   (a) Cost of reproduction.
   (b) Distortions.
   (c) Nomenclature.
   (d) Geographic details. [16]

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Code No: 07A70401 **R07** **Set No. 1**

IV B.Tech I Semester Examinations,NOVEMBER 2010
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. Describe the characteristics of a typical watershed and how they are derived using them? [16]
2. Discuss the advantages and merits of GIS over conventional maps with the help of suitable examples. [16]
3. (a) Describe the geographical techniques for ground water exploration.
   (b) What are the parameters to test the quality of ground water? [8+8]
4. What do you mean by parallax? Illustrate the nature of parallax on overlapping vertical photographs taken over varied terrain by means of a neat sketch. [16]
5. (a) Define remote sensing and enumerate the process of electro magnetic remote sensing.
   (b) Mention any eight application areas of remote sensing. [8+8]
6. Explain the fundamental difference between a simple set of graphics and a map in terms of how each represents our environment. What is so difficult about transferring a map to a computer? [16]
7. What is the major differene between hybrid and integrated GIS systems? Diagram data storage and access in each system. [16]
8. Write detailed notes on: [16]
   (a) Geostationary Satellites.
   (b) Sun synchronous Satellites.

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Code No: 07A70401 **R07** **Set No. 3**

IV B.Tech I Semester Examinations,NOVEMBER 2010
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. Sketch the geometric components of relief displacement. Also derive the expression for relief displacement. [16]
2. Discuss issues involved in watershed management for sustainable development and the role of Remote Sensing in addressing these issues. [16]
3. What are the steps to identify the sites and describe them for artifical recharge structures? [16]
4. Illustrate the meanings of the terms attributes and topology with the help of four examples for each term. [16]
5. What is a primary key? A tuple? A relation? A foreign key? A relational join? [16]
6. Explain in detail the process of interpretation for terrain evaluation. [16]
7. (a) Explain the basic components of Remote Sensing with the help of a neat sketch.
   (b) List any six advantages of using remotely sensed data. [10+6]
8. Identify which data structure (raster/vector) is suitable and why, for the following data process components
   (a) Integration.
   (b) Continuous space.
   (c) Data volume.
   (d) Discontinuous data. [16]

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