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**B.E. /B. Tech. ( Full Time ) ARREAR EXAMINATIONS OCT/DEC 2013**

**B.E. GEOINFORMATICS BRANCH**

**VI SEMESTER**

**GI 384 / GI 9353 GEOGRAPHICAL INFORMATION SYSTEM II**

**(REGULATIONS 2004/2008)**

**Max. Marks 100**

**Max. time 3 Hrs.**

**Note: Answer ALL Questions**

**PART A ( 10 X 2 = 20 Marks )**

1. List any two applications involving arithmetic overlay of raster datasets.
2. With a neat sketch explain viewshed analysis
3. With a neat sketch, explain how the area of a polygon is calculated using the co-ordinates of its vertices.
4. Differentiate Union and Intersection operation with a neat sketch.
5. Differentiate Fiscal and Legal Cadastre used in Land Information System
6. What is meant by Hot Spots used in Crime Mapping?
7. What is meant by interoperability of GIS?
8. What is meta data and give an example.
9. List any two Scripting languages used for Customisation of GIS
10. List any two advantages of Web GIS over Desktop GIS

**PART B ( 5 X 16 = 80 Marks )**

11.
  - i. Discuss in detail the functionality available in GIS for 3D data visualisation (6)
  - ii. If you were to develop a Web based GIS application for Health Information System, explain in detail the various functionalities that are required to be provided in such applications (10)
- 12.a. Explain in detail the various categories of Arithmetic, Logical and Trigonometrical functions available for Overlaying of raster data set  
**(OR)**
- 12.b. With an example for each, explain in detail any two type of operations under Neighbourhood operations and Extended Neighbourhood operations.
- 13.a.
  - i. With neat sketches explain in detail how network analysis could be

used to optimize the route of a garbage pickup truck in a city and discuss the details of the route network data required for such an application

**(OR)**

- 13.b. Given the road network of Tamil Nadu, district boundary and cadastral map, explain what overlaying algorithms are required to extract the following:
  - i. Districtwise details of National Highway, State Highway and District Roads (8)
  - ii. Given the width of the road, land parcelwise area of land in each category of road (8)
- 14.a.
  - i. Discuss in detail how tax mapping application can be developed using a Land Information System of a metro city. Emphasize your answer in terms of the role of High Resolution Imagery in extracting buildings and the non-spatial data required for such applications.

**(OR)**

- 14.b. Explain how GIS can be used to decide the location of a new branch of popular Merchant enterprise. Discuss the spatial and non-spatial data requirement for such a Business application.
- 15.a. Describe in detail the various components of Data Quality such as Lineage, Positional and Attribute accuracy, Logical Consistency and Completeness
- 15.b. Explain in detail the various sources of error creeping in at various stages of a GIS Project. Indicate the precautions that are to be taken up to minimize the error in each stage.

**(OR)**

12/10/13