



**B.E. /B.TECH (FULL TIME) DEGREE END SEMESTER EXAMINATIONS NOV-DEC 2011
REGULATION 2008
GEOINFORMATICS ENGINEERING BRANCH
SEVENTH SEMESTER**

GI 9403 GEOGRAPHICAL INFORMATION SYSTEM APPLICATIONS

Time : 3 Hr.

Max. Marks:100

Instructions: Answer **ALL** Questions
Illustrate with sketches wherever necessary

PART A (10 x 2 = 20 Marks)

1. What is the role of high resolution satellite imagery in Forest Resource Inventory Application
2. How are the watersheds prioritized based on physical and socio-economic criteria for watershed management
3. List the various assets to be mapped for developing a Water Supply Utility Management using GIS
4. Describe the Line of Sight Mapping for Mobile Communication Tower Siting Application
5. Explain the individual parameters in the following NMEA sentence:
\$GPGGA,092204.999,4250.5589,S,14718.5084,E,1,04,24.4,19.7,M,,,,,0000*1F
6. What is KIWI format and what are the advantages of KIWI format in Vehicle Navigation
7. Define Fiscal and Legal Cadastre
8. With a neat sketch describe the least cost path analysis algorithm
9. Why is server side architecture preferred for Web GIS Applications
10. What is the significance of satellite temporal resolution for disaster management applications

PART B (5 x 16 = 80 Marks)

11. i. With reference to a case study explain the data requirements, spatial and non-spatial query functionalities to be provided for developing a web based Land Information System (10)
ii. What is cluster analysis and how it is used in epidemiological GIS applications (6)
12. a. i. Describe in detail how satellite remote sensing could be used for Forest Resource Assessment application with respect to a. Resources Inventory, b. Forest Change Monitoring and c. Forest Productivity Assessment and Resource Management.
(OR)
12. b. i. Discuss in detail the various data requirements and steps involved in determining soil erosion using NDVI as a parameter (12)
ii. What are the advantages of Satellite Image derived NDVI based soil erosion quantification for temporal monitoring of watersheds (4)
13. a. i. Describe the seven application modules of BISON (Bangalore Information System on Networks) software for managing utilities in a GIS environment (6)
ii. Discuss in detail the functionalities available in Communication System Planning Tool(CSPT) for mapping mobile telecommunication coverage area using GIS (10)
(OR)
13.b. Discuss in detail the various GIS functionalities provided in Data Development, Route and Allocate Modules of WADSOP software for optimal design of water distribution system
14. a. i. What are the various communications channels available for Online Vehicle Tracking Applications and discuss the merits and demerits of each (6)
ii. With an example for each, explain the components of Online and Offline Vehicle Tracking System (10)
(OR)
14. b. i. With a neat sketch explain the role of different technologies such as GPS and GIS used for Vehicle Navigation. (10)
ii. Discuss the the specific requirements and characteristics of digital maps used for Vehicle Navigation applications (6)
15. a. With an example for each, explain in detail the spatial and non-spatial data requirements for developing a Land Information System for Urban and Rural Area.
(OR)
15. b. With neat sketches explain the various thematic criteria to be considered and discuss the various steps involved in least cost path analysis for Pipeline routing studies using GIS