



ANNA UNIVERSITY, CHENNAI
UNIVERSITY BACHELOR OF TECHNOLOGY EXAMINATION, MAY/JUNE 2006

Third Semester

Civil Engineering

CIE 003 --- GEOGRAPHICAL INFORMATION SYSTEM

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A --- (10 × 2 = 20 marks)

1. Define TIN.
2. Distinguish between spatial data and non-spatial data.
3. Define map and its types.
4. What is interval scaled data?
5. Distinguish the functions of Digitizer and Scanner.
6. What are cleaning functions of GIS database?
7. Give two examples of spatial query.
8. Differentiate Printer and Plotter.
9. List out atleast two map projections with its properties.
10. List out atleast two methods of reclassifications and its advantages.

PART B --- (5 × 16 = 80 marks)

11. Illustrate with suitable examples under which circumstances vector and raster based data studies are used. Also represent with a suitable drawing on how vector data structure is converted to raster data structure.

12. (a) Draw a GIS data structure and analytical steps you would propose for a best ski resort of a snowy mountain. Illustrate the spatial and attribute data you would assume for the project.

Or

- (b) What are the data quality checks you would propose to have a best data quality for a GIS based natural resources assessment of a given area.

13. (a) By considering the central line of four road inter-junction (of atleast two inter junctions of continuous road network) draw and label the Arc node topology. Also list all arc node and its from and to nodes.

Or

- (b) Given a piece of Earth surface how would you classify it for point, line and polygon data structure and its related attribute data. Assume the spatial and attribute data for representation.

14. (a) What is topology generation of a spatial data? Is it includes map projection? Justify your answer.

Or

- (b) With suitable examples of Urban Application explain the utility of AM/FM functions for service efficiency.

15. (a) Explain at least four neighbourhood functions and its key words of known GIS software and its corresponding modifiers used in GIS application.

Or

- (b) Illustrate how product derived from DEM are used for decision making in water resource management studies.