B 199

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Sixth Semester

Civil Engineering

CE 063 — GEOGRAPHICAL INFORMATION SYSTEM

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   List out at least four types of map projections.

2.   Define DEM and list out its 2 applications.

3.   Distinguish functional difference between scanner and digitizer.

4.   What is nominal data type?

5.   Define meta data.

6.   What is an urban sprawl?

7.   Quote two examples of application of AM/FM in utility network?

8.   What are the major sources of errors in GIS database?

9.   What are the components of GIS?

10. What is "block coding" in raster data structure?

PART B — (5 × 16 = 80 marks)

11. Illustrate with suitable drawings that represents different land use types of 5 polygons and its attribute and corresponding rater representation. Use suitable data structure of spatial and non-spatial data.

12. (a) Describe stepwise design of a vector based GIS project life cycle for the application of parcel based property tax assessment.

Or

(b) Urban growth is a continuous process – with suitable example explain how do you assess them using GIS tools.

13. (a) Discuss the possible DEM derived products of a "cut and fill" activity for a highway expansion project.

Or

(b) What is a GIS overlay function? Give suitable example on how to identify submergible area with varying intensity of a new dam site.

14. (a) What are the common topological errors of a vector data structure and how they could be rectified?

Or

(b) What is a buffering function of GIS? Sketch how these tools could be used to derive landuse map that fall 1 km away from but within 5 k of a given road network.

15. (a) With suitable example explain how GIS is used as an effective tool for natural resource management system?

Or

(b) List out various types of maps – elaborate with examples on how the digital maps serve as an effective communication tool in the context of current information technology revolution.

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