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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

GEOINFORMATICS ENGINEERING BRANCH

THIRD SEMESTER

GI 8301 Geo Database System

(Regulation 2012)

Draw neat sketches wherever necessary

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Differentiate data and information with example.
2. What is a Spatial Database Management System (SDBMS)?
3. Define spatial data model.
4. Define Functional dependency
5. What is the basic structure of SQL? Give Example.
6. Give two examples of spatial queries using SQL statements.
7. List the reasons for variable length records
8. What is shadowing with respect to database recovery?
9. What is property and event in VB? Give examples.
10. What is meant by WKT in spatial database? Give example.

Part – B (5 x 16 = 80 marks)

11. (i) Explain about different database architectures, users and administrators (12)
(ii) Discuss about multilayer architecture of SDBMS (4)
12. a) (i) What is normalization? Explain first three normal forms with examples (12)
(ii) Discuss about UML class diagram with example (4)

(OR)

- b) (i) Explain ER model with an example (12)
(ii) Explain intersection model of topological relationship in spatial data (4)
13. a) (i) Discuss about the triggers and its use with examples (8)
(ii) Explain Object Relational schema of point, line and polygon in spatial database with suitable examples. (8)

(OR)

- b) Consider the following schema (16)
- Supplier (sid: integer, sname: string, address: string)
Parts (pid: integer, pname: string, color: string)
Catalog(sid: integer, pid: integer, cost: real)

The key fields are underlined and domain is given after each field.

Write the following queries in **SQL**

- Find the names of suppliers who supply some red part.
 - Find the sids of suppliers who supply some red or green part
 - Find the sids of suppliers who supply some red and green part
 - Find the sids of suppliers who supply every red part
 - Find the sids of suppliers who supply every red or green part
 - Find the sids of suppliers who supply every red part or supply every green part
 - Find the pids of parts that are supplied by at least two different suppliers
- Find the cost of the red part supplied by "ABC company"

14. a) (i) Explain about Z-curve and Hilbert curve and the algorithms used in spatial indexing (10)

(ii) Explain the statistical database security problem and how we can rectify? (6)

(OR)

- b) (i) Discuss with an example B+ tree indexing (6)

(ii) Explain the methods for recovery from non- catastrophic transaction failures (6)

(iii) Discuss about Grid file indexing in spatial data (4)

15. a) Discuss in detail about any one spatial database management system based on the data structure, relationship and spatial functionalities (16)

(OR)

- b) Explain about database application development with the user interfaces (16)