First Semester M.Tech. Degree Examination, June 2012
Advances in Database Management Systems

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. Describe the following schema-based constraints:
   i)   Domain constraints
   ii) Key constraints
   iii) Constraints on NULL
   iv) Entity integrity constraints
   v)   Referential integrity constraints.   **(12 Marks)**
   b. Explain object identity and object structure. What are the advantages of OID?   **(08 Marks)**

2 a. Discuss type and class hierarchies and inheritances with examples. Give the constraints on extents.   **(10 Marks)**
   b. What are the differences between structured and unstructured complex objects? Explain them in detail. Give examples.   **(10 Marks)**

3 a. Describe objects and literals with their characteristics. Give any two standard interfaces for structured literals.   **(12 Marks)**
   b. Consider entities PERSON, FACULTY, STUDENT, GRAD-STUDENT, DEPARTMENT, COURSE, SECTION and CURR-SECTION of a university database. Draw graphical object database schema for this database.   **(08 Marks)**

4 a. Explain in detail the temporal database concepts.   **(10 Marks)**
   b. Describe the concepts of deductive databases in detail.   **(10 Marks)**

5 a. Explain the data portioning and parallelization of sequential operation evaluation in detail.
                                                                                (06 Marks)
   b. Discuss joins in parallelizing individual operations.   **(10 Marks)**
   c. List the messages initiated by two phase commit protocol.   **(04 Marks)**

6 a. What is data mining? Discuss the goals of data mining.   **(10 Marks)**
   b. Write the Apriori and decision tree algorithms.   **(10 Marks)**

7 a. Discuss data warehouse and list the characteristics.   **(10 Marks)**
   b. Discuss the star schema and snowflake schema. Give one example.   **(10 Marks)**

8 a. Discuss the data management issues in mobile databases.   **(10 Marks)**
   b. Discuss the characteristics of data in GIS.   **(10 Marks)**

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