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14SCS13

**First Semester M.Tech. Degree Examination, Dec.2015/Jan.2016**

**Advances in Database Management Systems**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. Define attribute, Relation schema, Relation state, Relational Database schema, and Relational database state. (10 Marks)  
b. Discuss the different types of update operations on a relation. Show an example of the violation of integrity constraints in each of the three types of update operations. (10 Marks)
- 2 a. What is the difference between persistent and transient objects? How is persistence handled in a typical OODBS? Explain with an example. (08 Marks)  
b. Explain what the following terms mean in OODB terminology: method, signature, message, visible attribute and hidden attribute. (05 Marks)  
c. Give an outline of the mapping from an EER schema into an ODL schema. (07 Marks)
- 3 a. List the object relational features included in SQL. Give an example, with syntax, for each feature. (10 Marks)  
b. Show the relationship between the ODMG group by, having and partition statements and the corresponding grouping and aggregation facility in SQL. Give an example to illustrate your answer. (10 Marks)
- 4 a. What is the difference between structured and unstructured complex object? Give examples. (04 Marks)  
b. Describe the architecture proposed for building parallel DBMSs. (10 Marks)  
c. Explain 'Data Partitioning' and Parallelization of sequential operation Evaluation methods. (06 Marks)
- 5 a. Explain the replication methods used in updating distributed data. (10 Marks)  
b. To separate functionality across different DBMS related processes, several distributed DBMS architectures are used. Discuss them. (06 Marks)  
c. What are classification rules? How are decisions Trees related to them? Illustrate with an example. (04 Marks)
- 6 a. Bring out the features of multi dimensional data model write an example. (10 Marks)  
b. Write an algorithm to find the frequent itemsets. Illustrate each step with a suitable example. (10 Marks)
- 7 a. With an example show how Bitmap Indexes are used to answer queries efficiently. (08 Marks)  
b. Explain the generalized model for Active Databases. With syntax summary and examples, show how active Rules are specified as Triggers using Oracle notation. (12 Marks)
- 8 a. Explain the nature of multimedia data and its applications. Discuss the issues to be addressed in multimedia data management. (12 Marks)  
b. Discuss the components of a GIS. What are the constraints present in a GIS? (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8=50, will be treated as malpractice.