

**MCSE - 203****M.E./M.Tech., II Semester**

Examination, June 2014

**Advance Concept in Data Bases***Time : Three Hours**Maximum Marks : 70***Note :** Attempt any five questions.

All questions carry equal marks.

1. a) What is the primary goal of normalization? How are the concepts of functional dependency and multivalued dependency associated with normalization? Give an example for some. 7
- b) Explain multivalued dependencies and also describe UNF with appropriate example. 7
2. a) Discuss the entity integrity and referential integrity constraints. Why is each considered important. 7
- b) Consider the two tables T1 and T2 shown below. Show the result of the following operations. 7
  - i)  $T1 \bowtie T1.P = T2.A \text{ } T2$
  - ii)  $T1 \bowtie T1.Q = T2.B \text{ } T2$

Table T1

P	Q	R
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10 a 5

15 b 8

25 a 6

Table T2

A	B	C
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10 b 6

25 c 3

10 b 5

3. a) Discuss the reasons for converting SQL queries into relational algebra queries before optimization is done. 7

- b) Discuss the cost components for a cost function that is used to estimate query execution cost which cost components are used most often as the basis for cost functions. 7
4. a) What is meant by heuristic optimization? Discuss the main heuristics that are applied during query optimization. 7
- b) Discuss the differences between pipelining and materialization? 7
5. a) Discuss the factors that do not appear in centralized systems that affect concurrency control and recovery in distributed systems. 7
- b) What are the software components in a client server DDBMS? Compare the two tier and three tier client server architectures. 7
6. a) What is the difference between persistent and transient objects? How is persistence handled in typical OO1 database systems? 7
- b) Explain briefly:
  - i) Object oriented data model
  - ii) Object Data Management Group 7
7. a) What are association rules as a type of knowledge? Give definition of support and confidence and use them to define an association rule. 7
- b) What processes and specializations are involved in the storage of data in a warehouse? 7
8. Write short notes: (any four) 14
  - i) Snowflake schema
  - ii) Mobile databases
  - iii) Data reduction
  - iv) Multimedia databases
  - v) Web databases