

END TERM EXAMINATION
THIRD SEMESTER [MCA] DECEMBER-2009

Paper code: MCA203
Paper ID: 44203
Time: 3hrs

subject: Database Management
(Batch: 2004-2008)
Maximum marks: 60

Note: Q.1 is compulsory. Attempt one question from each unit.

- Q1 Answer the questions briefly: - (2.5X8=20)
- (a) Discuss the various reasons that lead to the occurrence of null values in the database.
 - (b) How do the tables in SQL differ from the relations in relations?
 - (c) Differentiate between a procedural and non-procedural DML.
 - (d) Discuss the main categories of data model.
 - (e) Which of the six clauses of an SQL query are required and why?
 - (f) What is dependency preserving property for decomposition? Why is it important?
 - (g) What is a timestamp? How does the system generate timestamps?
 - (h) What are the advantages of distributed databases?

UNIT-I

- Q2 (a) Discuss the concepts of generalization and specialization. (5)
(b) Discuss the generalization specialization hierarchy for a motor vehicle sales company. The company sells motorcycles, passenger cars, vans and buses. Justify your placement of attributes at each level of hierarchy. Explain why they should not be placed at higher or lower level. (5)
- Q3 (a) Construct an E-R diagram for a car insurance company whose customers own one or more cars each. Each car has associated with it zero or more accidents associated with it. (5)
(b) What is data abstraction? Explain the mechanism by which it is achieved in the database environment? (5)

UNIT-II

- Q4 (a) Explain the different types of constraints that are to be enforced in a relational database environment. (5)
(b) How is project operation similar to select operation? (5)

Q5 Consider the following tables in RDBMS:
Supplier (S#, sname, status, city)

Parts (P#, pname, color, weight, city)

Projects (S#, P#, Proj#, qty)

Write SQL commands for the following queries:-

(a) Get S#, sname value of supplier who supplies proj1 with part1. (5)

(b) Get P# value for part supplied to any project by a supplier in the same city. (5)

UNIT-III

Q6 (a) What is meant by the term Third Normal Form? Explain. (5)

(b) Is a relation in BCNF always in third normal form? (5)

Q7 (a) What is meant by non-redundant and canonical cover? (5)

(b) Given R(ABCDEH) and F={A(BC, CD(E, E(C, AH(D)}, What is the key of the relation? What are the prime and non-prime attributes? Is there a unique key also? (5)

UNIT-IV

Q8 (a) What is write ahead logging? Discuss the mechanism of shadow page recovery. (5)

(b) What is a serial schedule? Discuss the serializability of schedules in context of serial schedule. (5)

(b) What is a serial schedule? Discuss the serializability of schedules in context of serial schedule. (5)

Q9 Write short notes on any two of the following: - (2X5=10)

(a) Deadlock prevention (b) Two phase locking

(c) Granulating of data items (d) Durability of transaction.
