

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 03

Total No. of Questions : 09

MCA (Sem.-3rd)**RELATIONAL DATABASE MANAGEMENT SYSTEM-I**

Subject Code : MCA-304

Paper ID : [B0113]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TEN** marks each and students has to attempt any **ONE** question from each **SECTION**.
2. **SECTION-E** is **COMPULSORY** carrying **TWENTY** marks in all.
3. Use of non-programmable **scientific calculator** is allowed.

SECTION-A

- 1) What is the architecture of a database? Explain with examples.
- 2) What are the various advantages of data bases over the file system?

SECTION-B

- 3) Compare the features of relational, hierarchical and network model.
- 4) Consider the database of a department store as follows :
 - i) Each employee is represented. The data about an employee are his employee number, name, address, and the department he works for.
 - ii) Each department is represented. The data about departments are its name, employees, manager, and items sold
 - iii) Each item sold is represented. The data about items are its name, manufacturer, price, model and internal item number
 - iv) Each manufacturer is represented. The data about a manufacturer are its name, address, item supplied, and price.Give an E-R diagram for this database. How the E-R diagram can be reduced to tables?

SECTION-C

- 5) What is normalization of the databases? What are the various types of normalization? Explain with example.
- 6) What are the various storage organization for the relational model? Explain with example.

SECTION-D

- 7) Explain why locks are necessary in the concurrent operations on the database? Explain the algorithm for testing the serializability of a schedule and also explain the algorithm.
- 8) Given the following relations.

Supplier(s#, Sname, City); S# as a key, Parts(P, Pname, Weight, Quantity);
P as a Key Supply(S, P, Quantity); S, P as key

Write the expression in oracle to answer the following queries

- (i) Find all part numbers being supplied
- (ii) Find part numbers and part names of parts held in quantity of less than 25.
- (iii) Find supplier names of suppliers who supply part number 3
- (iv) Find supplier number of supplier who are located in the same city as the supplier named 'pink'

SECTION-E

9) Write briefly :

- i) What do you understand by Entity and Entity set? Explain.
- ii) What are the structure of projection? Explain.
- iii) Explain the find statement.
- iv) Give example using SQL for the retrieval using exist.

- v) What is forth normal form?
- vi) What is the fifth normal form?
- vii) What do you understand by get? Explain.
- viii) Give example using SQL for the retrieval using union.
- ix) Give example using SQL for the retrieval using ANY.
- x) What are the log files?