

MCA-431**MCA-21**

**M.C.A. DEGREE EXAMINATION –
JUNE 2009.**

Fifth Semester / Third Year

**RELATIONAL DATABASE MANAGEMENT
SYSTEMS**

Time : 3 hours

Maximum marks : 75

PART A — ($5 \times 5 = 25$ marks)

Answer any FIVE questions.

1. With a neat sketch discuss the three-schema architecture of a DBMS.
2. Explain the distinctions among the terms primary key, candidate key and super key. Give a relevant example.
3. Discuss the use of the following in Data Definition Language :
 - (a) ON DELETE CASCADE
 - (b) ON DELETE SET NULL

4. Develop DDL in ORACLE 8i / 9i to create a relation EMPLOYEE with attributes PANNO whose data type is VARCHAR2(10), ENO with data type VARCHAR2(5), NAME with data type VARCHAR2(45), DOB with data type DATE, SEX with data type CHAR, DOJ with data type DATE, DESIGNATION with data type VARCHAR2(4), BASIC with data type NUMBER (8, 2), DNO with data type VARCHAR2(5), [PRIMARY KEY ENO].
5. With relevant examples discuss the use of the following in SQL :
 - (a) IS NULL
 - (b) IS NOT NULL.
6. What is an Index? Give the syntax for creating an UNIQUE INDEX in Oracle 8i / 9i. Also give a relevant example.
7. What is Embedded SQL? Discuss the same with an example.

PART B — ($5 \times 10 = 50$ marks)

Answer any FIVE questions.

8. Develop a Relational Model for a car-insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents. Assume appropriate attributes and state any assumptions you make.

9. List out and discuss the purpose of Network System Tables in Oracle 8 i / 9 i.

10. With relevant examples discuss the use of the following in SQL :

- (a) GROUP BY (4)
- (b) HAVING (3)
- (c) ORDER BY (3)

11. Consider the following six relations for an order-processing database application in a company :

CUSTOMER (Cust#, Cname, City)

ORDER (Order#, Odate, Cust#, Ord_Amt)

ORDER_ITEM (Order#, Item#, Qty)

ITEM (Item#, Item_Name, Unit_Price)

SHIPMENT (Order#, Warehouse#, Ship_Date)

WAREHOUSE (Warehouse#, City)

Here, Ord_Ant refers to total amount of an order, Odate is the date the order was placed; Ship_date is the date an order is shipped from the warehouse. Assume that an order can be shipped from several warehouses. Develop DDL in Oracle 8 i / 9 i for the above schema, enforcing necessary integrity constraints.

12. Consider the following relation :

EMP (Eno., Name, Date_Of_Birth, Sex, Date_Of_Joining, Basic_Pay, Dept.)

Develop SQL queries to perform the following :

- (a) List the details of all employees who earn more than 10000 as basic pay. (2)
- (b) List the details of all employees alphabetically. (2)
- (c) List the details of employees who earn basic pay more than the average basic pay of all employees. (3)
- (d) Display the average Basic_Pay in each department. (3)

13. Consider the following relation :

Employee (**Eno.** Name, Sex, Date_born, Date_joined, Designation, Basic, Dept_No.)

Department (**Dept No.** Name, Noe)

Develop the following triggers in Oracle 8 i / 9 i.

- (a) Develop a database trigger which will increment for NOE attribute in DEPARTMENT relation by 1 when a new record is inserted in the employee relation. (This situation occurs when a new employee is appointed) (5)
- (b) Develop a database trigger which will decrement the NOE attribute in DEPARTMENT relation when a tuple in the employee relation is deleted. (This situation occurs when an employee working in a department quits his / her job) (5)

14. Discuss the languages supported by Oracle Pre-compiler.