MCA–146   MCA-21

M.C.A. DEGREE EXAMINATION – JANUARY, 2009.

Fifth Semester/Third Year

RELATIONAL DATABASE MANAGEMENT SYSTEMS

Time : 3 hours   Maximum marks : 75

Answer for 5 marks questions should not exceed 2 pages.

Answer for 10 marks questions should not exceed 5 pages.

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. With relevant example explain the following Integrity Constraints:

   (a) Entity integrity

   (b) Referential Integrity.

2. Discuss the purpose of COMMIT, SAVEPOINT and ROLLBACK.

3. What is a Table Space? Discuss the need for the same.

4. Consider the following relations :

STUDENT (**Enrolment-no**, Name, Date-of-birth, Sex-code, Department-no)

DEPARTMENT (**Department-no**, Department-name)

Write queries in SQL to perform the following:

(a) List the Department-no and number of students in each department. (2)

(b) List the Enrolment-no, Name, Department-no, Department-name of all students. (3)

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

(a) IN

(b) NOT IN.

6. Consider the following relations :

STUDENT (**Enrolment-no**, Name, Date-of-birth, Sex-code, Department-no)

DEPARTMENT (**Department-no**, Department-name)

Develop DDL in Oracle 8i / 9i for the above schema enforcing necessary integrity constraints.

7. Why Embedded SQL? Discuss.

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PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8.   Develop a Relational Model for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. Assume appropriate attributes and state any assumptions you make.

9.   Diagrammatically illustrate and discuss the Oracle Database Architecture.

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 relations for a company database application :

Employee (**Eno**, Name, Sex, Dob, Doj, Designation, Basic_Pay, Dept_No)

Department (**Dent No**, Name)

Project (**Proi No**, Name, Dept_No)

Worksfor (**Eno, Proj No, Date**, Hours)

Develop the following using SQL for the above schema :

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(a) Develop an SQL query to list the details of employees who have worked in more than three projects on a day. (3)

(b) Develop an SQL query to list the department number and the number of employees in each department. (3)

(c) Develop a View that will keep track of the department number, the number of employees in the department, and the total basic pay expenditure for each department. (4)

12. With relevant examples discuss the different types of Joins.

13. With relevant examples discuss how the need for the following :

(a) ALTER TABLE

(b) DROP TABLE

(c) CREATE INDEX

(d) DROP INDEX.

Give the syntax for the same in Oracle 8i / 9i.

14. Compare the use of embedded SQL with the use in SQL of functions defined in a general-purpose programming language. Under what circumstances would you use each of these features?

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