

Roll No.

M.Sc. IT-10 (Master of Science in Information Technology)

Fourth Semester, Examination-2014

MIT-4002

Database Administration

Time Allowed : Three Hours

Maximum Marks : 60

Note : The paper is divided into three sections A, B and C. Notes for each section are given in the section itself.

Section - A

(Long answer type Questions)

**Note : Answer any 2 Question. Each question carries 15 marks.
(2×15=30)**

1. (a) What is database management system? How is DBMS different from the traditional file processing System. (8)
(b) Discuss the candidate key, primary key, foreign key, composite key and alternate key. (7)
2. (a) Discuss the architecture of Oracle. (8)
(b) Discuss the different categories of commands of SQL (7)
3. (a) Discuss the various aggregate function in SQL with an example for each. (8)
(b) What is an INDEX as defined in ORACLE? Write the syntax of creating an INDEX. (7)
4. Consider the following relational database:
STUDENT (name, student#, class, major)
COURSE (course name, course#, credit hours, department)
SECTION (section identifier, course#, semester, year, instructor)

GRADE REPORT (student#, section identifier, grade)

PREREQUISITE (course#, prerequisite#)

Specify the following queries in SQL on the above database schema. (3.5 x 4+1=-15)

- (i) Retrieve the names of all students majoring in 'CS'(Computer Science).
- (ii) Retrieve the names of all courses taught by Professor King in 1998
- (iii) Delete the record for the student whose name is 'Smith' and whose student number is 17.
- (iv) Insert a new course <'Knowledge Engineering', 'CS4390', 3, CS'>

Section - B

(Short answer type Questions)

Note : Answer any 4 question. Each question carries 5 marks.
(4×5=20)

1. Differentiate between
 - (i) DROP TABLE , DELETE TABLE
 - (ii) DROP TABLE, DROP VIEW
 - (iii) DROP TABLE, DROP SYNONYM
 - (iv) DROP TABLE, TRUNCATE TABLE
2. What do the following commands do?
 - (i) Commit
 - (ii) Rollback
 - (iii) Savepoint
3. What is a privilege? What are eight types of privileges?
4. Write a query to create a view from table EMP and DEPT that lists the Department names, their locations and number of employees in the department.

5. What is the purpose of following schema objects?
 - (i) Tables
 - (ii) Views
 - (iii) Synonyms
6. Differentiate between DDL and DML.
7. What is the difference between private synonym and public synonym? Create a private synonym namely *Dept1* for table *Dept*.
8. Discuss the role of FOREIGN KEY/REFERENCES constraints.

Section - C

(Objective type Questions)

Note : Answer all questions. Each question carries 1 Marks.

(10×1=10)

1. DML is provided for
 - (A) Description of logical structure of database.
 - (B) Addition of new structures in the database system.
 - (C) Manipulation & processing of database.
 - (D) Definition of physical structure of database system.
2. 'AS' clause is used in SQL for
 - (A) Selection operation.
 - (B) Rename operation.
 - (C) Join operation.
 - (D) Projection operation.
3. ODBC stands for
 - (A) Object Database Connectivity.
 - (B) Oral Database Connectivity.
 - (C) Oracle Database Connectivity.
 - (D) Open Database Connectivity.
4. Architecture of the database can be viewed as
 - (A) two levels.
 - (B) four levels.
 - (C) three levels.
 - (D) one level.

5. A relational database developer refers to a record as
 - (A) a criteria.
 - (B) a relation.
 - (C) a tuple.
 - (D) an attribute.
6. Which one of the following statements is false?
 - (A) The data dictionary is normally maintained by the database administrator.
 - (B) Data elements in the database can be modified by changing the data dictionary.
 - (C) The data dictionary contains the name and description of each data element.
 - (D) The data dictionary is a tool used exclusively by the database administrator.
7. Transaction processing is associated with everything below except
 - (A) Producing detail, summary, or exception reports.
 - (B) Recording a business activity.
 - (C) Confirming an action or triggering a response.
 - (D) Maintaining data.
8. The statement in SQL which allows to change the definition of a table is
 - (A) Alter.
 - (B) Update.
 - (C) Create.
 - (D) Select.
9. Which of the following is a legal expression in SQL?
 - (A) `SELECT NULL FROM EMPLOYEE;`
 - (B) `SELECT NAME FROM EMPLOYEE;`
 - (C) `SELECT NAME FROM EMPLOYEE WHERE SALARY = NULL;`
 - (D) None of the above
10. Which of the following is a comparison operator in SQL?
 - (A) =
 - (B) LIKE
 - (C) BETWEEN
 - (D) All of the above