

THIRD SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2014

(UG-CCSS)

Core Course**CA 3B 03—DATABASE DESIGN AND RDBMS**

Time : Three Hours

Maximum : 30 Weightage

I. Answer *all* questions :

- 1 The user who is having central control, over data and programs accessing that data is called _____
- 2 The command used to delete a table, within the database is _____
- 3 A functional dependency is a relationship between or among _____ of a relation.
- 4 A procedure that is executed automatically by the system as a side effect of a modification to the database is called _____
- 5 The ability to modify the conceptual schema without causing any change to the application program is known as _____
- 6 The problems due to repeating groups are taken care of in _____ normal form.
- 7 The **cartition** product of two relations with **cardinality** m and n results in a table with **cardinality** _____
- 8 The command used to change the contents of a table, within the database is _____
- 9 In SQL, the AVG() is an example for _____
- 10 DISTINCT keyword is used for _____
- 11 ON DELETE SET NULL ensures _____
- 12 To sort the results of a query we always use _____ clause.

(12 x $\frac{1}{4}$ = 3 weightage)II. Answer *all* questions :

- 13 Explain the terms **cardinality** and degree of relations with example.
- 14 Define the term Association.
- 15 What is the difference between Composite and Multi-valued attributes ?
- 16 Define third normal form.
- 17 What is **DDL** ? **Explain** with examples.
- 18 What is a view ?
- 19 Explain the referential integrity rule in relational database management system.

Turn over

20 What is a Cursor ?

21 What do you mean by triggers ?

(9 x 1 = 9 weightage)

III. Answer any *five* questions :

22 Explain with examples the conditional statement in **PL/SQL**.

23 What is a query language ? Explain the difference between procedural and non-procedural query language.

24 Explain the conversion as **2NF** to **3NF** with an example.

25 What is **multivalued** dependency ? Distinguish it with functional dependency.

26 Diagrammatically illustrate and discuss the three schema architecture of a DBMS.

27 Consider the following Teacher—Schema :—

```
Teacher(T_no, Name, Salary, Supervisor, Joiningdate, Birthdate, Title)
Class(Class_no, T_no, Room_no)
Payscale(Min_limit, Max_limit, Grade)
```

Express the following queries in SQL :

- (i) Display the name of the teacher who is oldest among all teachers.
- (ii) Display teacher numbers and names of those teacher who are earning less than "Jatin".
- (iii) Display the list of all those teachers whose salary is greater than any other teacher with job title "PRT".
- (iv) Display names of all teachers who are class teachers.

28 Explain the importance of integrity rules and integrity constraints in designing databases.

(5 x 2 = 10 weightage)

IV. Answer any *two* questions :

29 (a) Construct an E-R diagram for a Car-Servicing Company that has a set of customers, each of whom owns one or more cars. Each car has associated with one to any number of recorded service history. Each service job will be under the supervision of a service engineer. Convert this into a set of tables also.

(b) What is a Transaction ? Explain important properties of transactions.

30 Explain in detail the advantages and disadvantages of Database Management Systems over File Based Systems.

31 What are database triggers ? What are UPDATE triggers on CLIENT—MASTER table, which keep track of the records that are being updated. The old values of the updated record are added in the **AUDIT_TRAIL** table. Use required attribute with appropriate data types.

(2 x 4 = 8 weightage)