

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 × ¼ = 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 × 1 = 9 weight)

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 of 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 "Ja"
(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 database

(5 × 2 = 10 weight)

IV. Answer any *two* questions :

- 29 (a) Construct an E-R diagram for a Car-Servicing Company that has a set of customers, of whom owns one or more cars. Each car has associated with one to any number of record 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 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 records are added in the AUDIT_TRAIL table. Use required attribute with appropriate data types.

(2 × 4 = 8 weight)