B.Sc. DEGREE (C.B.C.S.) EXAMINATION, JUNE 2018

Second Semester

Core Course—CA2CRT03—DATABASE MANAGEMENT SYSTEMS

(2017 Admissions only)

[Common to B.Sc. Computer Applications M III (Triple Main) and B.C.A.]

Time : Three Hours   Maximum : 80 Marks

Part A

Answer any ten questions.
Each question carries 2 marks.

1. What is the difference between database schema and database instance ?

2. What is logical data independence ?

3. Define the term 'Data dictionary'.

4. Distinguish between strong and weak entity sets.

5. Define a view.

6. Explain the syntax of ALTER TABLE command.

7. Explain about natural join operation.

8. What is the impact of PRIMARY KEY constraint ?

9. List various aggregate functions in SQL.

10. Why we need transaction management in DBMS ?

11. Define functional dependency.

12. Define super key.

(10 × 2 = 20 marks)

Part B

Answer any six questions.
Each question carries 5 marks.

13. Discuss the ER model for a university database system.

14. Consider the following table stock : stock (ItemNo, Item, Dcode, Qty, UnitPrice, StockDate)

    Write SQL statements for the following queries :—

    (a) To create the table.

    (b) To display details of all items in the stock table in ascending order of StockDate.

Turn over

(c) To display ItemNo and name of those items from stock table whose UnitPrice is more than rupees 100.

(d) To display the details of those items whose dealer code (Dcode) is 102 or Quantity in stock (Qty) is more than 100 from the table stock.

(e) To display maximum UnitPrice of items for each dealer individually as per Dcode from the table stock.

15. Explain the desired properties of transaction.

16. Write a note on facilities in SQL to grant and revoke privileges to users.

17. Explain the three schema architecture of DBMS.

18. Consider the following relational database :

    Employee (employee name, street, city)

    works (employee name, company name, salary)

    company (company-name, city)

    manager (employee-name, manager-name)

Give an SQL DDL definition of this database. Identify referential integrity constraints that should hold and include them in the DDL definition.

19. Explain the different type of attributes occurs in ER model.

20. Explain the use of EXISTS and UNIQUE functions in SQL with example.

21. Discuss various functions of database users and administrators.

(6 × 5 = 30 marks)

Part C

Answer any two questions.
Each question carries 15 marks.

22. Discuss about the database system environment.

23. Explain types of single-level ordered indexes.

24. What is normalization ? Discuss 1 NF, 2 NF, 3 NF and BCNF with example.

25. Write notes on :

(a) Need of concurrency control in transaction.

(b) Need of transaction recovery.

(2 × 15 = 30 marks)