C 61224   (Pages : 3)   Name...............................

Reg. No................................

FOURTH SEMESTER B.C.A. DEGREE EXAMINATION, APRIL 2019

(CUCBCSS—UG)

B.C.A.

BCA 4B 05—DATA BASE MANAGEMENT SYSTEM AND RDBMS

(2017 Admissions)

Time : Three Hours   Maximum : 80 Marks

Section A

Answer all the questions.
Each question carries 1 mark.

1. Define the term DBMS.

2. What is a Candidate Key ?

3. Define Entity with examples.

4. What is a domain ?

5. Name the key that we call an attribute in one table that references a unique record in another table ?

6. What axioms means ? Explain.

7. What is the use of 'having' clause in SQL ?

8. What is DCL ?

9. Explain the use of ORDER BY clause of SQL.

10. How to lock Row-level ? Explain.

$(10 \times 1 = 10$ marks)

Section B

Answer all the questions.
Each question carries 2 marks.

11. What are the different database system applications.

12. Explain natural-join operation in relational algebra.

13. What is normalization? and why it is done ?

14. What is first normal form ?

15. What is tuple variable? Illustrate with an example.

16. Explain any two built-in functions with example.

17. What is Rollback ? Explain.

18. Explain shared mode lock and exclusive mode lock.

(8 × 2 = 16 marks)

Section C

Answer any **six** *questions.*
Each question carries 4 marks.

19. What are weak entity sets ? How a weak entity set can be converted into strong entity set ?

20. Explain the different limitations of file system in detail.

21. What are the different fundamental operations in relational algebra ? Explain any *three* with example.

22. Explain the three level architecture of Database Management System.

23. Explain the aggregate functions used in relational algebra.

24. Explain the syntax and working of SELECT command in SQL ?

25. Differentiate 3NF and BCNF with examples.

26. Consider the following relations.

    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 :

    (a) Display the name of the teacher who is oldest among all teachers.

    (b) Display the list of all teachers who are earning equal to any teacher who have joined before "31-December 94".

    (c) Display the list of all those teachers whose salary is greater than any other teacher with job title "PRT".

    (d) Display the list of all teachers whose job title and salary is same as that of the employees whose name is "Jaideep".

27. What is a Database user ? Explain.

(6 × 4 = 24 marks)

Section D

Answer any **three** *questions.*
Each question carries 10 *marks.*

28. (a) What is Entity Relationship Model ? Explain with example.

    (b) Explain the major constraints of ER model with examples.

29. (a) What is a database ? Describe the organization of database ?

    (b) What are the disadvantages of database system ? Explain them briefly.

30. Write note on :

    (a) Multivalued dependencies.

    (b) Closure of attribute sets.

    (c) Boyce codd normal form.

31. (a) Explain the aggregate functions used in relational algebra.

    (b) Explain different types of Attributes in a Table.

32. Write a note on :

    (a) Triggers.

    (b) Bound and unbound cursors.

    (c) FETCH and UPDATE.

    (d) FOR and FOREACH.

$(3 \times 10 = 30 \text{ marks})$