16U325 (Pages:3) Name: ……..

Reg. No…….

THIRD SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2017

(Regular/Supplementary/Improvement)

(CUCBCSS – UG)

CC15U BCA3 B03 - DATABASE DESIGN & RDBMS

(Core Course)

(2015 Admission Onwards)

Time: Three Hours Maximum: 80 Marks

PART A

Answer ***all*** questions. Each question carries **1** mark.

1. Ensuring isolation property is the responsibility of _____
   a. Recovery-management component of the DBMS
   b. Concurrency-control component of the DBMS
   c. Transaction-management component of the DBMS
   d. Buffer management component in DBMS
2. A table where all attributes are dependent on the primary key and are independent of each other, and no row contains two or more multivalued facts about an entity, is said to be in _____.
   a. 1NF c. 3NF
   b. 2NF d. 4NF
3. In an SQL statement, which of the following states the conditions for row selection?
   a. From c. Order By
   b. Group By d. Where
4. Which of the following SQL aggregate function gives the number of rows containing not null values for the given column?
   a. MIN c. SUM
   b. COUNT d. MAX
5. What type of join is needed when you wish to include rows that do not have matching values?
   a. Equi-join c. Natural join
   b. Outer join d. All of the above.
6. A named set of SQL statements that are considered when a data modification occurs are called _____.
   a. Stored procedures c. Triggers
   b. Packages d. Trapdoors
7. What is a database administrator?
8. What are the different types of lock in DBMS?

Turn Over

9. What do you mean by cascade-less schedules?
10. Define BNF?

(10x1=10 Marks)

PART B

Answer ***all*** questions. Each question carries **2** marks.

11. What are the different database design techniques?
12. What do you mean by functional dependency and trivial functional dependency?
13. What is two-phase locking?
14. Define the following terms:
    a. Primary key.
    b. Relationship instance.
15. Explain the advantages of using procedural language.

(5x2=10 Marks)

PART C

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

16. What do you mean by data independence? Explain its types.
17. Explain the basic DDL commands.
18. What are the different data types used to defineSQL attributes?
19. Detail on, the concept of generalization and specialization in ER.
20. Explain the classification of SQL commands based on functionality?
21. Differentiate between weak entity set and strong entity set.
22. Consider the following relations:
    S (S_No, SNAME, STATUS, CITY)
    SP (S_No, P_No, QTY)
    P (P_No, PNAME, COLOR, WEIGHT, CITY)
    Give an expression in SQL for each of queries below:
    a. Get supplier names for supplier who supply at least one red part
    b. Get supplier names for supplier who do not supply part P2.
23. What are cursors? Explain its types.

(5x4=20 Marks)

PART D

Answer ***any five*** questions. Each question carries **8** marks.

24. What is ER? Explain the different ER notations. Design an ER Diagram for student management system.
25. What do you mean by normalization? Explain its significance. What are the different normal forms in database design?
26. What is meant by concurrency control scheme? What is its significance? Explain the different types of concurrency control schemes?
27. Define the various clauses used with the basic SQL retrieval query. Explain each with example.
28. Consider the relations
    EMPLOYEE (ENO, ENAME, AGE, BASIC_SALARY)
    WORK_IN (ENO, DNO)
    DEPARTMENT (DNO, DNAME, CITY)
    Express the following queries in SQL
    a. Find names of employees who work in any department in Delhi.
    b. Get the department number of all departments where more than one employee is working.
    c. Find name of employee who earns highest salary in 'HR' department.
    d. Insert a new employee with Employee number: EMP1200, Name: "JASMINE", Age: 24, Basic Salary: 15000, and works in Department "Accounts" with Department Id: 12.
29. Detail on, the following constructs used in SQL.
    a. Nested queries.
    b. Joined tables and outer joins.
    c. Aggregate functions and grouping.
    d. Triggers.
30. What do you mean by Database constraints? Why are they significant? Explain the different types of constraints defined in DBMS.
31. Write a PL/SQL code to implement the following:
    Consider the following table that stores details of all employee of a company.
    EMPLOYEE (ENO, ENAME, AGE, BASIC_SALARY, JOIN_DATE)
    a. Update salary by 10% for all employees who have completed 12 months of service.
    b. Display status of updation as how many records are updated.

(5x8=40 Marks)

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