Reg. No………………………..………………….   Name………………………………………   **18U326**

B. C. A. DEGREE END SEMESTER EXAMINATION OCTOBER 2018

SEMESTER – **3: BACHELOR OF COMPUTER APPLICATIONS (CORE COURSE)**

COURSE: **16U3CRBCA9, RDBMS**

(For Regular - 2017 Admission and Supplementary / Improvement 2016 Admission)

Time: Three Hours   Max. Marks : 75

PART A

Answer ***all*** the questions from the following.

1. Define a data model. List two different data models.
2. Define data independence.
3. Define join operation.
4. List out the inference rules for functional dependency.
5. Define why the relational calculus is considered to be a non-procedural language?
6. Define correlated queries.
7. Define a super key.
8. State dirty update problem.
9. List the different states of a transaction.
10. Define a system log.

(1 x 10 = 10 Marks)

PART B

Answer any ***eight*** questions.

11. Write any four advantages of using DBMS approach.
12. Create a relation ***employee*** with field's first name, last name, middle name, DOB and address. Write a SQL query to retrieve the DOB and address of the employee whose name is " JOHN B.SMITH" .
13. Write the difference between drop and delete command in SQL with an example.
14. When a functional dependency is said to be minimal?
15. Explain the non-additive join property of decomposition.
16. Explain about the commit point in transaction.
17. Explain why recovery is needed.
18. Write the two different approaches used to store the relation in the distributed database.
19. List the three design goals for relational database.
20. When a transaction is said to be serializable?   (2 x 8 = 16 Marks)

PART C

Answer any ***five*** questions.

21. Explain schedules based on serializability?
22. Write the algorithm for computing the closure of a set of functional dependencies.
23. Explain 3NF.
24. Write an SQL trigger to carry out the action : On delete of an account , for each owner of the account, check if the owner has any remaining accounts, and if she does not, delete her from the depositor relation.
25. Explain Boyce-Codd normal form.
26. Explain the database system architecture.
27. What are the advantages of encrypting data stored in the database? (5 x 5 = 25 Marks)

PART - D

Answer any ***two*** questions.

28. Explain ER diagram. Draw an ER diagram for a Banking enterprise.
29. Explain the various data types and constraints used in SQL.
30. What is functional dependency and explain why 4NF is a normal form more desirable than BCNF?
31. Consider the following relation for published books:

    BOOK (book title, author name, book type, list_price, author_affil, publisher)

    author_affil refers to the affiliation of author. Suppose the following dependencies exist:

    book_title->publisher, book_type

    book_type->list_price

    author_name->author_affil

    What normal form is the relation in? Explain your answer. Apply normalization until you cannot decompose the relations further. State the reasons behind each decomposition.

(12 x 2 = 24 Marks)

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