FIRST SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2018
(CUCBCSS-UG)
CC18U SDC1 DB03 - DATA BASE SYSTEM CONCEPTS – MONGO DB
(Core Course)
(Information Technology)
(2018 Admission Regular)

Time : Three Hours   Maximum : 80 Marks

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

1. Relations produced from an E-R model will always be in _____

2. A deadlock exists in the system if and only if the wait for graph has _____ in it.

3. In ER model the details of the entities are hidden from the user. This process is called _____.

4. A _____ command that extracts some of the records from a file.

5. The _____ function returns TRUE if there are no duplicate tuples in the result of query Q.

6. Duplication of data in a database is called _____

7. DDL is an example of _____ language.

8. The most frequently using aspect of SQL is _____

9. The type of lock required before updating a piece of data in the database _____

10. _____ constraint states that no primary key value can be NULL.

(10 x 1 = 10 Marks)

PART B
Answer any *ten* questions. Each question carries 2 marks.

11. Define Hierarchical Model.

12. Define deadlock.

13. Define E-R model.

14. Define Record-Based Logical Models.

15. List the different types of database-system users.

16. Define Weak Entity Sets.

17. What is a candidate key?

18. Define single valued and multivalued attributes.

19. Explain the two types of participation constraint.

20. Define Relational Algebra.

21. Define BCNF.

22. Why should use Mongo DB? List some Mongo DB data types.

(10 x 2 = 20 Marks)

PART C
Answer any *five* questions. Each question carries 6 marks.

23. Explain DBMS interfaces.

24. Explain the three different update operations used in relational model.

25. Explain in detail the theory of normalization. Explain 1NF, 2NF, and 3NF by taking an un-normalized relation and apply the normalization procedure in sequence.

26. Write the SQL queries for this relational database.

    person (driver id, name, address)

    car (license, model, year)

    accident (report number, date, location)

    owns (driver id, license)

    participated (report number, license, driver id, damage amount)

    a) Find the total number of people who owned cars that were involved in accidents in 2009.

    b) Add a new accident to the database; assume any values for required attributes.

    c) Delete the Mazda belonging to "John Smith".

27. Show how 2PL protocol ensures serializability.

28. Explain the different states of transaction with the state diagram.

29. What is multi valued dependency? Illustrate 4NF with an example.

30. Explain Entity Integrity, Referential Integrity, and Foreign Keys.

(5 x 6 = 30 Marks)

PART D
Answer any *two* questions. Each question carries 10 marks.

31. Explain in detail about inheritance, specialization and generalization using ER diagrams.

32. What is a Data model? What are the different types of data models?

33. Explain the mapping cardinalities and participation constraints on binary relationship types.

34. Construct an ER diagram for Bank transactions.

(2 x 10 = 20 Marks)

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