FIRST SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2019

(Regular/Supplementary/Improvement)

(CUCBCSS-UG)

CC18U SDC1 DB03 - DATA BASE SYSTEM CONCEPTS – MONGO DB

(Information Technology - Core Course)

(2018 Admission onwards)

Time : Three Hours   Maximum : 80 Marks

PART A

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

1. 4NF is designed to cope with _____
2. AS' clause is used in SQL for _____
3. The RDBMS terminology for a row is _____.
4. The users who use easy-to-use menu are called _____
5. A table joined with itself is called _____
6. If an entity appears in N relationships then it is a _____ relationship.
7. The collection of information stored in the database at a particular moment is called _____
8. In a relational database a referential integrity constraint can be specified with the help of _____
9. The database conceptual schema is defined using _____ language.
10. SQL commands are classified into how many broad categories.

(10 x 1 = 10 Marks)

PART B

Answer any *eight* questions. Each question carries 2 marks.

11. Define Super key.
12. Define entity and entity set.
13. Define Aggregate Functions. List the aggregate functions supported by SQL.
14. Define Domain Constraints.
15. Define Second Normal Form.
16. What are the disadvantages of file processing system?
17. What is meant by the degree of relationship set?
18. What is a SELECT operation?
19. What is the use of rename operation?
20. List the table modification commands in SQL.
21. What are the advantages of MongoDB over RDBMS?
22. What is Cascading Rollback?

(8 x 2 = 16 Marks)

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

23. What is an attribute? Explain different types of attributes with example.

24. What is the role of Storage manager? What are the components of storage manager?

25. What is the difference between specialization and generalization?

26. Define join dependency and fifth normal form.

27. What is a minimal set of functional dependencies?

28. Explain the distinction between the terms primary key, foreign key, and super key with a suitable example.

29. Consider the following schemas:

    Sailors (sid, sname, rating, age)

    Reserves (sid, bid, day)

    Boats (bid, bname, color)

    Write the following queries in relational algebra:

    a. Find the name of sailors who have reserved boat 103.

    b. Find the names and ages of sailors with a rating above 7.

    c. Find the names of sailors who have reserved a red boat.

    d. Find the sname, bid, and day for each reservation.

    d. Find the name of sailors who have reserved at least one boat.

30. Explain deadlock detection and recovery.

31. Explain the CREATE ASSERTION statement and the CREATE TRIGGER statement.

(6 x 4 = 24 Marks)

PART B
Answer any *two* questions. Each question carries 15 marks.

32. a) What is meant by the concurrent execution of database transactions? why concurrency control is needed?

    b) Explain Concurrency control with locking methods.

33. Explain about Database Administrators and users.

34. a) Explain Transactions. What are the properties of database transaction? What are the two basic database access operations that a transaction can include?

    b) Construct an ER diagram for Bank transactions.

35. Explain relational algebra operations.

(2 x 15 = 30 Marks)

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