20U330S (Pages: 2) Name: …….

Reg. No……...……

THIRD SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2021

(CUCBCSS-UG)

CC15U BCA3 B03 - DATABASE DESIGN & RDBMS

(Core Course)

(2015 & 2016 Admissions- Supplementary)

Time: Three Hours Maximum: 80 Marks

PART A

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

1. Define Dependency preservation property.
2. What is 3NF.
3. What are the Selection operations in Relational Algebra?
4. What is a transaction?
5. Write a query for delete a table.
6. _____ express the number of entities to which another entity can be associated via a relationship set.
7. _____ symbol is used to denote the projection operation in relational algebra.
8. Triggers is a _____
9. _____ normal forms simplifies and ensures that there is minimal data aggregates and repetitive groups.
10. Consider the following action:

    Transaction …..

    Commit;

    Rollback;

    What does Rollback do?

(10 × 1 = 10 Marks)

PART B

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

11. Define SQL and state the differences between SQL and other conventional programming Languages.
12. Define the "integrity rules".
13. What is an instance?
14. Define the term normalization. Explain 2NF
15. What is meant by Transitive Dependency?

(5 × 2 = 10 Marks)

PART C

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

16. Describe the three levels of data abstraction.
17. Define Join and enlist its types. Illustrate with help of an example.
18. What are stored-procedures? Explain the advantages of using them.

19. What are triggers? What are its different types?
20. Explain ER diagram and components in detail.
21. What are ACID properties of a transaction?
22. Explain different type of locks in DBMS?
23. Explain the difference between DELETE, TRUNCATE and DROP commands?

(5 × 4 = 20 Marks)

PART D

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

24. Explain different types of constraints.
25. Describe the types of keys in relational model with example.
26. Explain transaction phases. Explain in detail.
27. What are the different type of normalization? Explain each with example.
28. What is the E-R model? Explain the different symbols used to define a ER model?
29. What is a cursor? Explain the different types of cursors used in Database design.
30. List significant differences between a file-processing system and a DBMS.
31. Consider the following tables.

```
Worker (
        WORKER_ID INT NOT NULL PRIMARY KEY AUTO_INCREMENT,
        FIRST_NAME CHAR(25),
        LAST_NAME CHAR(25),
        SALARY INT(15),
        JOINING_DATE DATETIME,
        DEPARTMENT CHAR(25)
)
Title (
        WORKER_REF_ID INT,
        WORKER_TITLE CHAR(25),
        AFFECTED_FROM DATETIME,
        )
```

Write a SQL query:

(i) To print details of the workers who are also managers.

(ii) To fetch the list of employees with the same salary.

(iii) To fetch the departments that have less than five people in it.

(iv) To print the name of employees having the highest salary in each department.

(5 × 8 = 40 Marks)

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