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Name:

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2020

(CUCBCSS-UG)

CC15U BCS4 B06

FUNDAMENTALS OF DATABASE MANAGEMENT SYSTEM & RDBMS

(Computer Science – Core Course)

(2015, 2016 Admission Supplementary/Improvement)

Time: Three Hours

Maximum: 80 Marks

PART - A

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

1. The type of locks which allows us to perform write operation is -----
2. ----- specifies the predefined set of possible values an attribute can take.
3. The operator used for string pattern matching in SQL is -----
4. The maximum number of relationship instances that an entity can participate in a binary relationship determines its -----
5. ----- represents a logical unit of a database processing that access and update various data items in a database.
6. The person who propose relational model is-----
7. An ----- is a condition that is specified on a database schema, and restricts the data that can be stored in an instance of the database.
8. An expression in tuple relational calculus is of the form -----
9. The overall logical structure of a database can be expressed graphically by means of-----

10. In the three level architecture of a DBMS, the level which describes how data is actually stored is called -----

(10 x 1 = 10 Marks)

PART - B

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

11. What do you mean by a view?
12. Explain the Two-Phase Locking Protocol to ensure serializability.
13. Define a cursor.
14. Distinguish between strong and weak entity.
15. What is logical independence?

(5 x 2 = 10 Marks)

PART - C

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

16. Discuss the various data models.
17. What is trigger? Write an example trigger in SQL to illustrate a real life situation.
18. Describe the four important properties of transaction in DBMS. Explain each of them.
19. Explain the stored procedure and its implementation in SQL
20. Explain the various aggregate functions available in SQL
21. Explain in brief the types of locks available in SQL
22. What are keys. Write about the types of keys in DBMS.
23. Write in brief about the different types of database users.

(5 x 4 = 20 Marks)

PART – D

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

24. For the following relation schema, give an expression in SQL for each of the following queries:
Employee (employee-name, street, city)
Works (employee-name, company-name, salary)
Company (company-name, city)
Manages (employee-name, manager-name)
 - a) Find the names, street address, and cities of residence for all employees who work for 'First Bank Corporation' and earn more than \$10,000.
 - b) Find the names of all employees in the database who live in the same cities as the companies for which they work.
 - c) Find the names of all employees in the database who live in the same cities and on the same streets as do their managers.
 - d) Find the names of all employees in the database who do not work for 'First Bank Corporation'.
25. What is functional dependency? Explain all the normal forms.
26. Explain the advantages of Database Management System over conventional file keeping.
27. Explain the DML commands with syntax and examples.
28. Explain three level architecture of DBMS with a neat diagram
29. What are the responsibilities of a DBA and database designers?
30. What is relational algebra? Explain the operations of relational algebra with examples.
31. What are the ACID properties? Explain each.

(5 x 8 = 40 Marks)
