18P344 (Pages: 2) Name……..

Reg. No……...……..

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(Regular/Supplementary/Improvement)

(CUCSS-PG)

(Computer Science)

CC17P CSS3 C01 - ADVANCED DATABASE MANAGEMENT SYSTEM

(2017 Admission onwards)

Time: Three Hours Maximum: 36 Weightage

PART A

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

1. What are ACID properties?
2. List and illustrate the states for transaction execution.
3. Define weak entity set with an example.
4. What are the responsibilities of DBA?
5. What are the basic data types available for attributes in SQL?
6. List the aggregate functions in SQL.
7. Differentiate DML and DDL. Write a sample query for both.
8. Briefly note Group by Clause with an example.
9. What is recoverable schedule? Why it is desirable?
10. Compare RDBMS and OODBMS.
11. Define normalization.
12. List the merits and demerits of OODBMS.

(12 x 1 = 12 Weightage)

PART B

Answer any ***six*** questions. Each question carries 2 weightage.

13. Describe the different types of attributes with examples.
14. Consider the query SELECT NAME, AGE, SALARY FROM EMPLOYEE

    WHERE DEPT=PRODUCTION

    Relation is given as EMPLOYEE (ID, NAME, AGE, SALARY, DEPT, ADDRESS)

    Give a relational algebra expression corresponding to the query.
15. What is trigger? Consider a relation Employee(E_id, E_name, Age, Salary).Create a trigger which shows an error message, if an insertion of a tuple with salary <40,000 on Employee relation is performed.
16. List out and explain the anomalies in relational database design.

17. What is candidate key? Given a relation R(A B C D E) and following are the functional dependencies of relation R, F= {AB→ CD, C→D}. Find the candidate key of the relation R.
18. Discuss briefly on Deadlock Prevention Protocols used for ensuring concurrency control in 2-phase locking method.
19. Write a note on Lost Update problem and Dirty Read Problem with example.

    What is conflict serializability? Check whether the given schedule is conflict serializable or not: $r_1(x)$, $r_2(z)$, $r_1(z)$, $r_3(x)$, $r_3(y)$, $w_1(x)$, $w_3(y)$, $r_2(y)$, $w_2(z), w_2(y)$

    [Note: r_i represents read operation, w_i represents write operation and x, y, z denotes data items]
20. What is meant by distributed database? Mention its advantages.

(6 x 2 = 12 Weightage)

PART C

Answer any ***three*** questions. Each question carries 4 weightage

21. How concurrency is controlled using Time Stamp Ordering algorithm?
22. Construct an ER diagram for Company database.
23. Discuss the various architectures of Distributed database.
24. Explain SELECTION and PROJECTION operation in relational algebra with example.
25. Differentiate 3NF and Boyce-Codd normal form. Why Boyce-Codd normal form is said to be a stronger form of 3NF?
26. Write notes on Stored Procedures with example.

(3 x 4 = 12 Weightage)

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