A Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2023

Fourth Semester

Computer Science and Business Systems

19UCB404 - Database Management Systems

(Regulations 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. INSERT INTO employee _____ (1002,Joey,2000)   CO1- U

   (a) Table   (b) Values   (c) Relation   (d) Field

2. _____is a key in a relational database that is unique for each record   CO2- App
   and also called unique identifier

   (a) Primary Key   (b) Foreign key   (c) Super key   (d) Candidate key

3. _____ normal form is based on the Multi valued dependency   CO2- App

   (a) 1NF   B) 2NF   C) 3NF   D) 4NF

4. Which one of these is a desirable property of a decomposition?   CO1- U

   (a) Partition constraint   (b) Dependency preservation

   (c) Redundancy   (d) Security

5. _____ Operator is used for appending two strings.   CO2- App

   (a) &   (b) %   (c) || (d) _

6. Which of the following is used to declare a record?   CO1- U

   (a) %ROWTYPE   (b) %TYPE   (c) Both A & B   (d) None of the above

7. Which of the following has "all-or-none" property?   CO1- R

   (a) Atomicity   (b) Durability   (c) Isolation   (d) All of the mentioned

8. _____ refers to a property of computer to run several operations   CO2- App
   simultaneously and possible as computers await response of each other

   (a) Concurrency   (b) Deadlock   (c) Backup   (d) Recovery

9. Which of the following is not a NoSQL database? CO1- U

(a) SQL Server (b) MongoDB

(c) Cassandra (d) None of the mentioned

10. _____ stores are used to store information about networks, such as CO2- App
social connections.

(a) Key-value (b) Wide-column (c) Document (d) Graph

PART – B (5 x 2= 10 Marks)

11. Give an example for ternary relationship CO1- U

12. Define normalization CO1- U

13. Explain the purpose of %TYPE and % ROWTYPE data types with the CO3- App
example?

14. What is rigorous two-phase locking protocol? CO1- U

15. What are the advantages of NoSQL over traditional RDBMS? CO2- App

PART – C (5 x 16= 80 Marks)

16. (a) Discuss in detail about the various Integrity constraints CO1- U (16)

Or

(b) Explain in detail about the various DML and DDL queries and CO2- App (16)
Create a DML, DDL for student database.

17. (a) Discuss the candidate key, primary key, super key, composite CO2- App (16)
key and alternate key with relevant examples for each

Or

(b) Illustrate the concept of anomalies and redundancies also CO2- App (16)
discuss in detail about decomposition and its types

18. (a) Compare and contrast implicit and explicit cursors and write CO2- Ana (16)
cursor program for electricity bill calculation

Or

(b) Illustrate triggers with a sample program to calculate grade of CO2- Ana (16)
the student

19. (a) Illustrate the ACID properties through examples CO2- App (16)

Or

(b) Discuss the violations caused by each of the following: Lost CO1- U (16)
update problem, Dirty read, Non-repeatable read, Phantom
read.

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20. (a) Illustrate the key-value stores in NoSQL.   CO2- App   (16)

Or

     (b) Explain in detail about CAP theorem   CO1- U   (16)

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