Reg. No. : | | | | | | | | | | |

Question Paper Code: 41245

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Fourth Semester

Computer Science and Engineering

14UCS405 - DATABASE MANAGEMENT SYSTEMS

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Relational algebra is a _____ query language that takes two relations as input and produces another relation as output of the query.

    (a) Relational   (b) Structural
    (c) Procedural   (d) Non Procedural

2. 3NF is based upon

    (a) Transitive dependency   (b) Full functional dependency
    (c) both (a) and (b)   (d) none of the above

3. A command to remove a relation form an SQL database

    (a) Delete table <table name>   (b) Drop table   <table name>
    (c) Erase table <table name>   (d) Alter table <table name>

4. DML stands for _____

    (a) Data mining language   (b) Database mining language
    (c) Data management language   (d) Data manipulation language

5. A transaction that completes its execution successfully is said to be _____

    (a) Committed   (b) Failed   (c) Aborted   (d) Active

6. Either all operations of the transaction reflected properly in the database or non are called

    (a) Durability   (b) Isolation   (c) Atomicity   (d) Consistency

7. Block-interleaved distributed parity in RAID is

    (a) 4   (b 2   (c) 3   (d) 5

8. In b-tree the number of keys in each node is _____ than the number of its children

    (a) one less   (b) same   (c) one more   (d) half

9. A distributed database has the advantages over a centralized database in

    (a) Software cst   (b) Software complexity
    (c) Slow response   (d) Modular growth

10. The full form of KDD is_____

    (a) Knowledge database   (b) Knowledge discovery database
    (c) Knowledge data house   (d) Knowledge data definition

PART - B (5 x 2 = 10 Marks)

11. List four significant differences between a file processing system and a DBMS.

12. The employee information in a company is stored in the relation
    Employee (<u>name</u>, sex, salary, deptName)

    Write the SQL query for the average salary of male employees in the computer science Department.

13. Classify the types of failure in database transaction.

14. Name the advantages of distributed databases.

15. Define clustering.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Draw the system architecture of DBMS and write the purpose of each block. (8)

        (ii) Construct an E-R diagram for university database with all possible entities, attributes, relations, mapping cardinalities. (8)

Or

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(b) (i) Explain the following relational-algebra operation with suitable examples.

      (1) selection   (2) projection

      (3) rename   (4) union   (8)

(ii) Construct an ER diagram for student management system. (8)

17. (a) (i) With suitable examples write about set comparison, set union, sub-queries in the from clause and scalar sub-queries in SQL. (8)

   (ii) Illustrate the concept of embedded SQL with suitable example. (8)

Or

(b) (i) Examine the steps involved in query processing. (8)

   (ii) List out the different selection operations involved in query processing. (8)

18. (a) (i) Demonstrate conflict serializable and view serializable schedules. (8)

   (ii) How is concurrency controlled through lock based protocol? Write the types of locks and lock compatibility matrix. (8)

Or

(b) (i) Describe how the dead lock occurs. How it can be prevented? (8)

   (ii) Explain the transaction states with suitable diagram. (8)

19. (a) Summarize the main goals of RAID technology. Describe the RAID levels 1 through 5. (16)

Or

(b) Explain hash file organization in detail. (16)

20. (a) Outline the basic concepts of data mining and data warehousing. (16)

Or

(b) Discuss in detail about distributed database with neat diagram. (16)

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