C

Reg. No. :

Question Paper Code: 54805

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fourth Semester

Information Technology

15UIT405 - DATABASE MANAGEMENT SYSTEMS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

PART A - (5 x 1 = 5 Marks)

1. In a table, _____ represents a relationship among a set of   CO1- R
    values.

    (a)Column   (b)Key   (c)Row   (d) Entry

2. The _____ operation, denoted by −, allows us to find tuples that   CO2- R
    are in one relation but are not in another.

    (a) Union   (b) Set-difference   (c) Difference   (d) Intersection

3. In the _____ normal form, a composite attribute is converted to   CO3- R
    individual attributes.

    (a) First   (b) Second   (c) Third   (d) Fourth

4.
    _____ states that only valid data will be written to the database. CO4- R

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

5.
    The searching technique that takes O (1) time to find a data is   CO5- R

    (a) Linear Search   (b) Binary Search (c) Hashing   (d) Tree Search

PART – B (5 x 3= 15Marks)

6. Define Data Models. CO1- R

7. What is meant by Relational Algebra? CO2- R

8. Define Non-loss Decomposition. CO3- R

9. State the ACID Properties. CO4- R

10. Write short note on Indexing and Hashing. CO5 -R

PART – C (5 x 16= 80Marks)

11. (a) (i) llustrate Entity Relationship Model (E-R model) with necessary diagrams for Banking System. CO1- App (10)

    (ii) Describe about various Data models. CO1 -U (6)

Or

    (b) Draw and explain the architecture of Database system. CO1- App (16)

12. (a) (i) The following tables form part of a database held in a relational DBMS: CO2 -App (08)

    Employee (empno, name, office, age).
    Books (isbn, title, authors, publisher).
    Loan (empno, isbn, date).
    Write the following queries in relational algebra.
    (a) Find the name of all employees who have borrowed a book published by McGraw-Hill.
    (b) Find the name of all employees who have borrowed all book published by McGraw-Hill.
    (c) Find the names of employees who have borrowed more than five different books published by McGraw-Hill.
    (d) For each publisher, find the name of employees who have borrowed more than five books of that publisher.

    (ii) What is Relational Model? Explain its types. CO2-U (08)

Or

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(b) Elucidate Distributed Database and Client/Server Database with neat sketch. CO2- Ana (16)

13. (a) Elaborate Non-loss Decomposition with suitable example. CO3- Ana (16)

Or

(b) Illustrate Join Dependencies and Fifth Normal Form with relevant example. CO3- Ana (16)

14. (a) Explain the following in detail: CO4 -U

   (i) Transaction Recovery (06)

   (ii) System Recovery (06)

   (iii) Media Recovery (04)

Or

(b) (i) Illustrate two phase locking protocol with neat sketch. CO4 -App (10)

   (ii) Write short notes on deadlocks. CO4- U (6)

15. (a) Elaborate in detail about RAID levels. CO5 -U (16)

Or

(b) (i) Illustrate File Organization with suitable example. CO5-U (08)

   (ii) Explain in detail about Database Tuning. CO5- U (08)

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