

B.E. Sixth Semester (Computer Sci. & Engg., Computer Engg.) (CGS)
10330 : Elective-II : Database Management System (DBMS) : 6 FEKS 05

P. Pages : 2

Time : Three Hours



AU - 2785

Max. Marks : 80

- Notes :
1. All question carry equal marks.
 2. Answer **three** question from Section A and **three** question from Section B.
 3. Illustrate your answer necessary with the help of neat sketches.
 4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION-A

1. a) Explain the functional operations of Relational Algebra. 7
- b) What is a data model? Explain different types of data models. 7

OR

2. a) Describe the six major steps while setting up a database for a particular enterprise. 7
- b) Explain the three levels of data abstraction. 7
3. a) Explain with help of example aggregate function in SQL. 6
- b) Explain several forms of authorization on parts of database? What is the purpose of having separate categories of index and resource authorization. 7

OR

4. a) What is a view? List the reasons why to choose to define a view. 6
- b) Consider the bank database where the primary keys are under linked the SQL queries for this relational database:
branch (branch-name, Branch-city, assets)
account (account-number, branch-name, balance)
loan (loan-number, branch-name, amount)
Customer (Customer-name, customer-strect, city)
depositor (Customer-name, account-number)
borrower (Customer-name, loan-number)
i) Find all customers name and loan number and amount who have taken form bank.
ii) Find all customers who have both loan and account at the bank.
iii) Find the names of all branches that have an assets value greater than that of each branch in Brooklyn. 7

5. a) Explain with suitable example what is Referential Integrity. 6
- b) Define the term Normalization. why is it necessary to decompose the relation into several relations? With an example state the anomalies are removed by decompositions. 7

OR

6. a) List and explain with suitable example the pitfalls in relational database design. 7
b) With the help of ER diagram explain composite, multivalued and derived attributes. 6

SECTION-B

7. a) What are the steps in query processing? Explain the functionality of each step. 7
b) Give the choice of evaluation plan in query optimization. 6

OR

8. a) What is meant by query optimization? How is it achieved? 6
b) Give and explain Merge join Algorithm for computing the join operation. 7
9. a) Define transaction. What are the properties of transaction? Explain with the help of an example. 7
b) How atomicity and durability of a transaction is implemented by the recovery management? 6

OR

10. a) What is recoverable schedule? Why is recoverability of schedule desirable. 6
b) Explain view serializability and blind writes. 7
11. a) What is deadlock? Explain deadlock detection and recovery. 7
b) Show by example that there are schedules possible under the free protocol that are not possible under the two-phase locking protocol and vice-versa. 7

OR

12. a) Draw architecture of remote backup system and explain several issues in designing a remote backup system. 7
b) Explain the time stamp-based locking protocol. 7

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