



II B.Tech II Sem Regular End Examination, August 2021

DATABASE MANAGEMENT SYSTEMS**(CSE & INF)****Time: 3 Hours.****Max. Marks: 70**

Note: 1. Answer any FIVE questions.

2. Each question carries 14 marks and may have a, b as sub questions.

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| 1 | a) | Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. | 7M | C01 | BL2 |
| | b) | Demonstrate data abstraction implementation in DBMS. | 7M | C01 | BL3 |
| 2 | a) | Differentiate File systems from DBMS. | 7M | C01 | BL2 |
| | b) | Define data independence. How do you implement data independence in DBMS? Explain. | 7M | C01 | BL3 |
| 3 | a) | List out any four operations on relational algebra. Explain. | 7M | C02 | BL2 |
| | b) | Consider the Bank Management System.
account(account_number, branch_name, balance)
branch (branch_name, branch_city, assets)
customer (customer_name customer_street, customer_city)
loan (loan_number, branch_name, amount)
depositor((customer_name, account_number)
borrower(customer_name, loan_number)
Answer the following queries using relational algebra operators.
1. List all branch names and their assests
2. List all accounts of Brooklyn branch
3. List all loans with amount > 1000.
4. List all accounts of Perryridge branch with balance < 1000.
5. List Numbers of accounts with balances between 700 and 900 | 7M | C02 | BL3 |
| 4 | a) | Describe in brief about Domain Relational calculus. | 7M | C02 | BL3 |
| | b) | Explain the operators in SQL with examples.
a) ANY b) IN c) EXISTS d) EXCEP | 7M | C03 | BL2 |
| 5 | a) | Explain various types of Joins available in SQL with examples. | 7M | C02 | BL3 |
| | b) | Define functional dependency? How can you compute the minimal cover for a set of functional dependencies? Explain it with an example. | 7M | C03 | BL2 |

6	a)	Explain two phase locking for ensuring serializability.	7M	C04	BL2
	b)	What is a transaction? Write the properties of a transaction.	7M	C04	BL3
7	a)	Explain how Concurrency control can be achieved with locking methods.	7M	C04	BL3
	b)	How does multilevel indexing improve the efficiency of searching an index file?	7M	C05	BL2
8	a)	How does a B tree differ from a B+ tree? Why is a B+ tree usually preferred as an access structure to a data file? Explain	7M	C05	BL3
	b)	Explain about Linear Search.	7M	C05	BL4

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