R22 Regulation *Subject code: 4E4FD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech IV Semester Regular Examinations, July 2024

DATABASE MANAGEMENT SYSTEMS

(Information Technology)

Maximum Marks: 60 Date:23.07.2024 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A	CO	Bloom Tx
All the following questions carry equal marks (10X1M=10 Marks)			
1.a)	List the properties of ER diagram.	CO1	L2
b)	Explain the three levels of abstraction.	CO1	L1
c)	Explain integrity constraints over relations.	CO2	L1
d)	Create a table with employee details like eno, ename, bdate, address, dname, dmanager, dno, age, phone number. List the name. eno, dname and phone number of the employee who are also the managers of the respective departments.	CO2	L2
e)	What is functional dependency?	CO3	L1
f)	How can we identify that the relation is in 2NF?	CO3	L2
g)	Write about transaction states.	CO4	L2
h)	What are ACID properties? Explain.	CO4	L1
i)	List and briefly explain some other common operations in relational databases.	CO5	L2
j)	What are expressions in the context of query evaluation?	CO5	L1

	Part-B		
Answer All the following questions. (5X10M=50Marks)			Bloom Tx level
2	a) List various categories of database users and discuss their interfaces to DBMS. [5] b) Discuss the functionality of query evaluation engine. [5]	CO1	L3&4
	OR		
3	Construct an Entity-Relationship diagram for a online shopping systems such as Jabong/Flipcart. Quote your assumptions and list the requirements considered by you for conceptual database design for the above system. [10]	CO1	L5
4	Consider the following schema to write queries in Domain relational calculus: Sailor(sid, sname, age, rating) Boats(bid, bname, bcolor) Reserves(sid,bid,day) [10] a) Find the boats reserved by sailor with id 567.	CO2	L4

	b) Find the names of the sailors who reserved 'red' boats. c) Find the boats which have at least two reservations by different sailors.		
	OR		
5	a) Discuss in detail about the set operations in relation algebra. [5] b) Create trigger with an example. [5]	CO2	L3
6	a) Explain different normal forms based on functional dependencies. [5] b) Explain about dependency preserving decomposition. [5]	CO3	L2
	OR		
7	a) Explain BCNF. Give an example. [5] b) What are the steps to be followed to convert a relation in 3NF to BCNF? [5]	CO3	L2
8	What is meant by concurrency control? [10]	CO4	L2
	OR		
9	a) Explain transaction states and desirable properties. [5] b) How to test serializability of a schedule? Explain with an example. [5]	CO4	L2&4
10	Explain detail about materialized view. [10]	CO5	L2
	OR		
11	Evaluate the impact of indexing on selection and sorting performance. [10]	CO5	L5