R18 Regulation *Subject code:2O7AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, July 2022

DATABASE MANAGEMENT SYSTEMS

(CE)

Maximum Marks: 70 Date:07.07.2022 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Write the syntax for various commands present in DDL.
2 Write down the applications of DBMS.
3 Explain Domain relational calculus.
4 List the primitive operators in Relational Algebra.
5 How can we identify that the relation is in 2NF?
6 Describe about the non-trivial functional dependency.
7 What is meant by buffer management?
8 What are ACID properties? Name them.
9 Differentiate volatile and nonvolatile storage.
10 What is meant by linear hashing?

Part-B

Answer All the following questions. (10MX 5=50Marks)

11 What are the main components in a DBMS and briefly explain what they do. [10]

OR

12 State and explain various features of E-R Models. [10]

13 How we can convert relationship sets with key constraints into tables? Explain. [10]

OR

14 Consider the following relations
Sailors (sid, sname, rating, age)
Boats (bid, bname, color)
Reserves (sid, bid, day)
Write the statements in Relational Algebra, Relational Calculus, Domain Relational Calculus and SQL for the following questions.
a) Find the names of sailors who have reserved a Red boat.
b) Find the names of sailors who have reserved at least one boat.
c) Find the names of sailors who have reserved a Red or a White boat.
d) Find the names of sailors who have reserved all boats. [10]

15 What are the steps to be followed to convert a relation in 3NF to BCNF? [10]

OR

16 How to compute closure of set of functional dependency? Explain with a suitable example schema. [10]

17 Explain the check point log based recovery scheme for recovering the database. [10]

OR

18 Write and explain the Time stamped and optimistic concurrency control algorithms. [10]

19 A. What are the indexed data structures? Explain any one of them. [5]

B. Compare dynamic hashing with static hashing. [5]

OR

20 A. Discuss insert, delete, and search operations on B+ trees. [5]

B. What are the Pros and Cons of ISAM? [5]