R17 Regulation *Subject code:* 1P4EB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Year II Semester Supplementary Examinations, July 2021

Database Management Systems

(CSE)

Maximum Marks: 70 Date:19.07.2021 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 Differentiate between schema and data model.
2 List various notations used in the ER model?
3 List the primitive operators in Relational Algebra.
4 What is trigger ? write an example?
5 Define SECOND Normal form.
6 Write the rule of 2NF?
7 Explain the principle of Atomicity?
8 Write about Dirty read problem in Concurrent Access?
9 What is meant by secondary index?
10 How to compute the disk access time?

Part-B

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

11 a) List various categories of database users and discuss their interfaces to DBMS.
b) Discuss the functionality of query evaluation engine. [5+5]

OR

12 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]

13 a) Write short notes on difference, union, rename and Cartesian product operations in relational algebra.
b) How we can convert relationship sets with key constraints into tables? Explain. [5+5]

OR

14 a) Describe about aggregate operators with examples.
b) Discuss in detail about the properties of relation algebra. [5+5]

15 a) What are the steps to be followed to convert a relation in 3NF to BCNF?
b) How the lock manager implements lock and unlock requests? Explain. [5+5]

OR

16 a) How we can translate E-R diagram with aggregation? Explain.
b) Discuss different kinds of Joins with examples. [5+5]

17 a) Explain Different transaction states ? Justify how ACID properties protect consistent state of Database?
b) Discuss about Conflict serializability , View serializability with suitable example? [5+5]

OR

18 What is meant by concurrency control? [10]

19 a)What is schedule? Explain about serial and non serial schedule.
b)How the concurrency control is done in B+ trees? Explain. [5+5]

OR

20 What are the indexed data structures? Explain any one of them. [10]