



Regulation R20

Subject Code:3P3ED

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, July 2022

DATABASE MANAGEMENT SYSTEMS

(Common to CSE, CSE (AI & ML), CSE (DS))

Maximum Marks: 70

Date:27.07.2022 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.
 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 What are the levels of data abstraction?
- 3 Define Tuple relational calculus?
- 4 What is meant by nested queries?
- 5 What is second normal form?
- 6 What is meant by buffer management?
- 7 Write about AICD Properties?
- 8 What is meant by remote backup system?
- 9 What is clustered index?
- 10 How to compute the disk access time?

Part-B

Answer All the following questions.

(10M X 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/Flipkart. Quote your assumptions and list the requirements considered by you for conceptual database design for the above system. [10]
- 13 a) With a suitable example explain division operation in relational algebra.
b) What is the usage of 'group by' and 'having' clauses in SQL? [5+5]
OR
- 14 Consider the following schema to write queries in Domain relational calculus:
Sailor(sid, sname, age, rating)
Boats(bid, bname, bcolor)
Reserves(sid,bid,day)
 - a) Find the boats reserved by sailor with id 567.
 - b) Find the names of the sailors who reserved 'red' boats.
 - c) Find the boats which have at least two reservations by different sailors. [10]

- 15 What is functional dependency? Explain computing closures of F with suitable examples [10]
- OR
- 16 Explain different Normal forms based on functional dependencies. [10]
- 17 Describe Lock based locking protocols? [10]
- OR
- 18 Discuss about failure with loss of nonvolatile storage.
- 19 What is meant by extendable hashing? How it is different from linear hashing? [10]
- OR
- 20 What are the indexed data structures? Explain any one of them. [10]