



R22 Regulation *Subject code: 4E4EC*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
 (Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech IV Semester Regular Examinations, July 2024
Database Management Systems
 (Common to CSE, CSE(AI&ML) & CSE(DS))

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 purpose of Database Management System.	CO1	BTL1
b)	Define Entity – Relationship Model.	CO1	BTL1
c)	Relate your view about Semi structured data model.	CO2	BTL1
d)	Define-relational algebra.	CO2	BTL1
e)	What is the difference between DELETE and TRUNCATE commands?	CO3	BTL1
f)	Compare and contrast 2NF with 3NF.	CO3	BTL1
g)	Define transaction management.	CO4	BTL1
h)	Define deadlock.	CO4	BTL1
i)	Draw the structure of B+ tree?	CO5	BTL1
j)	What mechanisms applied to avoid collision during hashing.	CO5	BTL1
Part-B			Bloom Tx level
Answer All the following questions. (5X10M=50Marks)			
2	Identify different Database languages with examples. (10M)	CO1	BTL3
OR			
3	Construct an E-R diagram for a banking enterprise with almost all components and explain. (10M)	CO1	BTL3
4	a) Compare the relational algebra and calculus. (5M) b) Explain in detail about expressive power of algebra and calculus. (5M)	CO2	BTL5
OR			
5	Interpret Aggregate Operators with examples. (10M)	CO2	BTL5
6	Consider the employee database, where the primary keys underlined. employee(empname,street,city)works(empname,companyname,salary)company (companyname,city)manages(empname, management)Give an expression in the relational algebra for each request. 1) Find the names of all employees who work for First Bank Corporation. 2) Find the names, street addresses and cities	CO3	BTL5

	of residence of all employees who work for First Bank Corporation and earn more than 200000 per annum. 3) Find the names of all employees in this database who live in the same city as the company for which they work. (10M)		
	OR		
7	Interpret normalization and explain all the normal forms with an example. (10M)	CO3	BTL5
8	Explain Timestamp Based Protocols in detail. (10M)	CO4	BTL4
	OR		
9	a) Classify deadlock detection methods. (5M) b) List acid properties in details. (5M)	CO4	BTL4
10	a) Analyze about the B+ Tree file organization in detail. (5M) b) Dissect a B+ tree to insert the following key elements (order of the tree is 3) 5, 3, 4, 9, 7, 15, 14, 21, 22, 23.(5M)	CO5	BTL4
	OR		
11	Define Hashing & infer linear hashing with an example. (10M)	CO5	BTL4