



R18 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 2P4FC

B.Tech IV Semester Regular/Supplementary Examinations, July 2021

## DATABASE MANAGEMENT SYSTEMS (INFORMATION TECHNOLOGY)

Maximum Marks: 70

Date:31.07.2021 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 What is the Purpose of Database Systems?
- 2 What are the features of ER Model?
- 3 What are differences between UNION, INTERSECT?
- 4 What is tuple in DBMS explain with an example?
- 5 What is Schema Refinement?
- 6 What are the Properties of Decompositions
- 7 What are the ACID properties in DBMS?
- 8 Define the terms Storage, Recovery and Atomicity?
- 9 What is indexing and types of indexing?
- 10 Explain Indexed Sequential Access Method

### Part-B

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

- 11 A. Explain Database Architecture with neat diagram.  
B. Define entity, attribute and explain notations of ER diagram with an example. (5+5)

OR

- 12 A. Explain DDL DML and DCL commands with syntax  
B. Explain three schema architectures, the Logical data independence and Physical data Independence. (5+5)

- 13 A. What is a relation convert ER model to relational model?  
B. Discuss with an example, the standard operations on sets are available in relational Algebra. (5+5)

OR

- 14 A. Explain the fundamental operations in relational algebra with examples.  
B. Describe the set operations of relational algebra. (5+5)
- 15 A. When is a decomposition said to be dependency preserving? Why this property Useful? Explain.

B. Define BCNF? Compare BCNF and 3NF with an example. (5+5)

OR

- 16 A. What is the need for normalization? Discuss all normal forms with a diagram and Example.  
B. Illustrate lossless join decomposition. (5+5)
- 17 A. Differentiate Transaction Recovery and Media Recovery?  
B. Give an overview of validation-based protocol. (5+5)

OR

- 18 A. Explain about the Multiple granularity Concurrency Control protocol.  
B. What is serializability? Explain. (5+5)
- 19 A. Explain the Insertion and deletion Operations in B+ trees with example.  
B. Discuss in detail about all file organization methods. (5+5)

OR

- 20 A. Compare and contrast Hash based indexing and tree-based indexing.  
B. Explain Deletion and insertion operations in ISAM with example. (5+5)