

Code No: 124CQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year II Semester Examinations, December - 2024 /January - 2025
DATABASE MANAGEMENT SYSTEMS
(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.
 ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.
 iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A**(25 Marks)**

- | | |
|--|-----|
| 1.a) Define Primary Key. | [2] |
| b) How to create a check constraint in SQL? Give example | [3] |
| c) What are Correlated Sub queries? | [2] |
| d) Mention the Pitfalls in Relational DB Design. | [3] |
| e) Define Functional dependency. | [2] |
| f) What is the need for Normalization? | [3] |
| g) List the various transaction states. | [2] |
| h) Define the term ACID. | [3] |
| i) Differentiate between static and dynamic hashing. | [2] |
| j) Mention the types of hashing. | [3] |

PART - B**(50 Marks)**

2. Explain the architecture of DBMS with a neat sketch. [10]

OR

3. Discuss the various SQL language commands in detail with syntax and examples. [10]

4. Explain different relational algebra operations in DBMS. [10]

OR

5. Explain in detail about Triggers and its example. [10]

6. Explain about Normalization and its types with examples. [10]

OR

7. Explain the following:
 a) Decomposition of BCNF.
 b) Advantages of Functional Dependency. [5+5]

8. Discuss the various Concurrency Control protocols used for concurrent execution of transactions. [10]

OR

9. Write a detailed note on Recovery Techniques adopted in DBMS. [10]

10. Compare the efficiency of B-tree indexing and hashing for large database systems. [10]

OR

11. Elucidate Hash Based and Tree Based Indexing. [10]