

ADMISSION NUMBER									

## School of University Polytechnic

Diploma in Computer Science and Engineering

Mid Term Examination - May 2024

Duration : 90 Minutes

Max Marks : 50

### Sem IV - N1DF405B - Relational Database Management Systems

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Describe the process of designing an Entity-Relationship (E-R) diagram for a database schema. Explain the significance of notations used in E-R diagrams. K2 (2)
- 2) List the basic elements of a relational database management system (RDBMS), including key components and their functionalities. P K1 (3)
- 3) Describe the three-level architecture of a Database Management System (DBMS) in detail. Explain the functionalities and interactions of each level. K2 (4)
- 4) Discuss the advantages and disadvantages of the Object-Oriented Model in the context of database management. Provide examples to illustrate each point. K2 (6)
- 5) Illustrate concept of a database record and its components. Discuss the role of field names in organizing and accessing data within a record. K3 (6)
- 6) Illustrate the role of Database Users in a Database Management System (DBMS). Discuss the different types of Database Users and their respective privileges and responsibilities. K3 (9)
- 7) Compare various data model and classify it based on its nature. Discuss the local models in detail, focusing on object-oriented and entity-relationship models. K4 (8)
- 8) Compare and contrast the intersection and difference operations in relational algebra, highlighting their similarities and differences. K4 (12)

**OR**

Compare and contrast the basic operations (union, intersection, difference) with the additional relational algebraic operations (projection, selection, division), highlighting their respective roles and functionalities in database operations. K4 (12)