

# CENTER FOR DISTANCE AND ONLINE EDUCATION



## ASSIGNMENT-JULY 2024

### SUB. NAME: - DATABASE MANAGEMENT SYSTEM

#### MCA – 102: Online Mode

- Q-1** *Explain the concept of a Database Management System (DBMS). Discuss the advantages of using a DBMS over traditional file systems. What are the various components of a DBMS? Explain with neat diagram*
- Q-2** *Describe the various types of database models. Compare and contrast the Relational Model with the Object-Oriented Model.*
- Q-3** *Explain various Data Definition Commands in detail with syntax & examples*
- Q-4** *Write SQL queries to perform the following operations on a database table named 'Employees':*
- *Retrieve all employees whose salary is greater than \$50,000.*
  - *Update the salary of employees in department 'Sales' by 10%.*
  - *Delete records of employees who have not worked on any project.*
- Q-5** *What is a Transaction in a DBMS? How does it ensure data consistency?*
- Q-6** *Design an Entity-Relationship (ER) diagram for a university database system that includes entities such as 'Students', 'Courses', 'Instructors', and 'Enrollments'. Define the primary keys, foreign keys, and relationships.*
- Q-7** *Discuss the role of a Database Administrator (DBA). What are the key responsibilities of a DBA in managing a DBMS?*
- Q-8** *Write an SQL query to create an index on the Email column of the Customers table to improve query performance.*
- Q-9** *Explain the concept of database transactions. What are the different isolation levels available in a DBMS, and how do they impact transaction processing?*
- Q1-0** *What is concurrency control? How is it achieved in database systems? Explain various concurrency control techniques.*