**Final Exam**

**Total Marks:100 Date: 14-11-2024**

| **This schema represents a basic Online Course Management System. Answer questions 1 - 5 based on this schema.**  CREATE TABLE Instructor (  InstructorID INT AUTO\_INCREMENT PRIMARY KEY,  Name VARCHAR(255) NOT NULL,  Email VARCHAR(255) NOT NULL UNIQUE,  Phone VARCHAR(15),  Department VARCHAR(50)  );  CREATE TABLE Course (  CourseID INT AUTO\_INCREMENT PRIMARY KEY,  Title VARCHAR(255) NOT NULL,  Credits INT NOT NULL,  InstructorID INT,  FOREIGN KEY (InstructorID) REFERENCES Instructor(InstructorID)  );  CREATE TABLE Enrollment (  EnrollmentID INT AUTO\_INCREMENT PRIMARY KEY,  StudentID INT,  CourseID INT,  EnrollmentDate DATE NOT NULL,  FOREIGN KEY (StudentID) REFERENCES Student(StudentID),  FOREIGN KEY (CourseID) REFERENCES Course(CourseID)  );  CREATE TABLE Student (  StudentID INT AUTO\_INCREMENT PRIMARY KEY,  Name VARCHAR(255) NOT NULL,  Email VARCHAR(255) NOT NULL UNIQUE,  Phone VARCHAR(15)  ); | | |
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| **Q.No** | **QUESTIONS** | **Marks** |
| 1 | Draw an Entity-Relationship (ER) diagram to represent this Online Course Management System schema. | 10 |
| 2 | Write an SQL query to insert a new enrollment record for a student (e.g., StudentID 5) into the course with the highest credit hours. | 10 |
| 3 | Write an SQL UPDATE query to assign a new instructor to a course (e.g., CourseID 3) by updating the InstructorID. | 10 |
| 4 | Write an SQL query to find the names of instructors who teach the most credits (total). | 10 |
| 5 | Write an SQL query to list all students who are enrolled in more than two courses. | 10 |
| 6 | Design an ER diagram for a simple online retail system that includes entities such as Customers, Products, and Orders. Keep the diagram simple. | 10 |
| 7 | Explain the difference between GROUP BY and ORDER BY in SQL. Provide an example for each to illustrate. | 10 |
| 8 | Given a table Instructor with a Salary column, write an SQL query to find the second-highest salary among instructors. | 10 |
| 9 | You have two tables, Instructor and Course. Use ON DELETE CASCADE on Course so that all courses are deleted when an instructor is removed. | 10 |
| 10 | Describe the most challenging topic you encountered in this course. Explain why it was challenging and how you overcame it. | 10 |