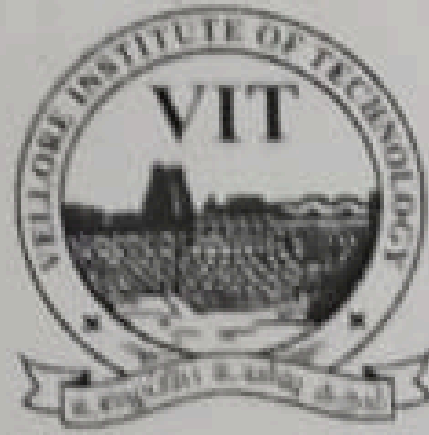


Reg. No.

Name

**VIT**
B H O P A L

www.vitbhopal.ac.in

MID TERM EXAMINATIONS – November 2024

Programme	: B.Tech.	Semester	: Interim Semester 2024-25
Course Title	: Database Management Systems	Course Code	: CSE3001
Date/Session	: 6 Nov 2024/Session I	Slot	: B22+B24+F21
Time	: 1 ½ hours	Max. Marks	: 50

Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks
1		Based on the requirements of a VIT Bhopal University database, draw an ER diagram that includes the entity's Students, Courses, and Instructors. Ensure that relationships between the entities are depicted.	10
2		Describe the three levels of database architecture. How does mapping between these levels work? What are the advantages of having a three-tier architecture in a database system?	10
3		Construct the following queries in Relational Algebra of the database schema Customer (cid, name, address, ph.no), product (pid, pname, cost), book (cid, pid, date). Where cid and pid are primary key of Customer and product respectively. a) Find all products which are booked on 1st March. b) Find name and address of all customers who booked product of cost greater than 300 on 1st January.	10
4		Explain the concepts of set-based operators and tuple-based operators in relational algebra. Analyze how these operators differ in terms of their operation and impact on data.	10
5		Explain the key functions of SQL in a relational database. Differentiate between DDL (Data Definition Language), DML (Data Manipulation Language), and DCL (Data Control Language) by providing examples of each.	10

⇔⇔⇔