NAME OF THE PROGRAM: *CSE*	DEGREE: *B.Tech*
COURSE NAME: *Database Management System*	SEMESTER: *6th*
COURSE CODE: *PCC-CS691*	COURSE CREDIT: *2*
COURSE TYPE: *PRACTICAL*	CONTACT HOURS: *4P*
SESSION: *2021-2022*	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
1.	Design an ER diagram for a Motor Vehicle Branch that administers driving tests and issues driver's licenses. Analyze the requirements by identifying the entities, attributes, relationships, keys, constraints etc. Apply extended entity-relationship features to the design. Defend your design with proper assumptions and justifications. Map the ER model into a relational model.	CO1	PO1, PO2, PO3, PO5	PSO1
		CO4	PO6, PO9	
		CO5	PO10	
2.	Design an ER diagram for an application that models soccer teams, the games they play, and the players in each team. Analyze the requirements by identifying the entities, attributes, relationships, keys, constraints etc. Apply extended entity-relationship features to the design. Defend your design with proper assumptions and justifications. Map the ER model into a relational model.	CO1	PO1, PO2, PO3, PO5	PSO1
		CO4	PO6, PO9	
		CO5	PO10	
3.	Design an ER diagram for an application that models an educational institute having several departments, faculty, students, projects, student hostels etc. Analyze the requirements by identifying the entities, attributes, relationships, keys, constraints etc. Apply extended entity-relationship features to the design. Defend your design with proper assumptions and justifications. Map the ER model into a relational model.	CO1	PO1, PO2, PO3, PO5	PSO1
		CO4	PO6, PO9	
		CO5	PO10	
4.	i. Create tables for Client, Product, and Salesman with the attributes given, implementing DDL commands for specifying prime attributes, non-prime attributes, foreign keys, cardinalities, null values, constraints etc. and the data types. Implement DDL commands for drop, alter on the tables created.	CO2	PO1, PO2, PO3, PO5	PSO2
		CO4	PO6, PO9	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
	ii. Implement DML commands like populating the tables with data using insert command and retrieving data using simple queries in SQL. (Application of select, update, delete etc.)	CO5	PO10	
5.	i. Create tables for Client, Product, Salesman, Sales__Order, and Sales__Order__Details and populate them. Retrieve data by writing queries in SQL using logical operators, aggregate operators, group by, having, order by clauses etc.	CO2	PO1, PO2, PO3, PO5	PSO2
	ii. Create tables for Employee, Company and works and populate them. Retrieve data by writing nested queries in SQL using JOIN to combine tables and other operators like IN, BETWEEN, LIKE etc.	CO4	PO6, PO9	
		CO5	PO10	
6.	i. Design an ER diagram for an application that models a car-insurance company whose customers own one or more cars each. Analyze the requirements by identifying the entities, attributes, relationships, keys, constraints etc. Apply extended entity-relationship features to the design. Defend your design with proper assumptions and justifications. Map the ER model into a relational model.	CO1	PO1, PO2, PO3, PO5	PSO1, PSO2
		CO2	PO1, PO2, PO3, PO5	
	ii. Create tables, populate with data and construct queries (advanced) in SQL to extract information from the car insurance company's database.	CO4	PO6, PO9	
		CO5	PO10	
7.	i. Design an ER diagram for an application that models a hospital doctors treat patients, prescribe tests, monitor progress etc. Analyze the requirements by identifying the entities, attributes, relationships, keys, constraints etc. Apply extended entity-relationship features to the design. Defend your design with proper assumptions and justifications. Map the ER model into a relational model.	CO1	PO1, PO2, PO3, PO5	PSO1, PSO2
		CO2	PO1, PO2, PO3, PO5	
	ii. Create tables, populate with data and construct queries (advanced) in SQL to extract information from the car insurance company's database.	CO4	PO6, PO9	
		CO5	PO10	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
8.	i. Implement a PL/SQL block that will accept student id number from the user, and check is student attendance is less than 80% then display message that student cannot appear in exam. [Table: STUDENT (STUD_ID, primary key, STUD_NAME, STUD_ATT)]. ii. Implement a PL/SQL code block that will accept an account number from the user. Check if the user's balance is less than the minimum balance, only then deduct Rs.100 from the balance. The process is fired on the ACCT_MSTR table. [Table: ACCT_MSTR (ACCT_NO, ACCT_HOLDR_NAME, CURBAL].	CO3	PO1, PO2, PO3, PO5	PSO2

	iii. Implement a PL/SQL code block to calculate the area of a circle for a value of radius varying from 3 to 7. Store the radius and the corresponding values of calculated area in an empty table named AREAS, consisting of two columns Radius and Area. [Table: AREAS (RADIUS, AREA)].
	
	iv. Implement a PL/SQL procedure that takes weight of an apple box as input from the user.
	   ● If the weight is >= 10 kg, rate =Rs. 5/kg.
	   ● If the weight is < 10 kg, rate = Rs. 7/kg.
	Calculate the cost of the apple box. Display the output on the screen.
		CO4	PO6, PO9	

	v. Implement a PL/SQL procedure to calculate the difference between highest salaried and lowest salaried employee. Store the information in a table. vi. Implement a PL/SQL block using cursor that will display the name, department and the salary of the first 3 employees getting lowest salary. [Table: Employee (ename, dept, salary)] vii. Implement a PL/SQL cursor that will update salary of all employees, such that, it allows an increment of 20% if the salary is less than 2000 otherwise increment of Rs.1000. It should print old and new salary for all employees. [Table: Employee (ename, dept, salary)]	CO5	PO10	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
9.	Consider the following relations and Draw the ER, EER Diagram, Relational Model and write the SQL statement for the following queries: Create the tables and insert 5 sets of records into each. employee (personname, street, city) works (personname, companyname, salary) company (companyname, city) manages (personname, managername)	CO2	PO1, PO2, PO3, PO5	PSO2
	a) Find the names of all employees who work for Axis Bank. b) Find the names and cities of residence of all employees who work for Axis Bank. c) Find the names, street addresses, and cities of residence of all employees who work for Axis Bank and earn more than Rs.30000 per annum. d) Find all employees who live in the same city as the company for which they work is located. e) Find all employees who live in the same city and on the same street as their managers.	CO4	PO6, PO9	
	f) Find all employees in the database who do not work for Axis Bank. g) Find all employees who earn more than every employee of Axis Bank. h) Assume that the companies may be located in several cities. Find all companies located in every city in which Axis Bank is located. i) Find all employees who earn more than the average salary of all employees of their company. j) Find the company that has the most employees.	CO5	PO10	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
	k) Find the company that has the smallest payroll. l) Find those companies whose employees earn a higher salary, on average, than the average salary at Axis Bank. m) Modify the database so that ABC now lives in Kolkata. n) Give all employees of Axis Bank a 10 percent raise. o) Give all managers in the database a 10 percent raise. P) Give all managers in the database a 10 percent raise, unless the salary would be greater than Rs.300000.In such cases, give only a 3 percent raise. q) Delete all tuples in the works relation for employees of Axis Bank.			
10.	Consider the following tables: MATCH (match_id, team1, team2, ground, mdate, winner) PLAYER (p_id, lname, fname, country, yborn, bplace, ftest) BATTING (match_id, p_id, mts, order, out_type, fow, nruns, nballs, fours, sixes) BOWLING (match_id, p_id, novers, maidens, nruns, nwickets)	CO2	PO1, PO2, PO3, PO5	PSO1, PSO2
	1. Draw the appropriate ER, EER and Relational model for the given data.	CO4	PO6, PO9	
	2. Write SQL expressions for the following: i) Find match ids of those matches in which player 27001 bats and makes more runs than he made at every match he played at Sydney. ii) Find player ids of players who have scored more than 30 in every ODI match that they have batted. iii) Find the ids of players that had a higher average score than the average score for all players when they played in Sri Lanka.	CO5	PO10	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
11.	A record company wishes to use a computer database to help with its operations regarding its performers, recordings and song catalogue. A requirements analysis has elicited the following information: • Songs have a unique song number, a non-unique title and a composition date. • A song can be written by a number of composers; the composer's full name is required.	CO1, CO2	PO1, PO2, PO3, PO5	PSO1, PSO2
	• Songs are recorded by recording artists (bands or solo performers). • A song is recorded as a track of a CD. A CD has many songs on it, called tracks. CDs have a unique record catalogue number, • A title and must have a producer (the full name of the producer is required).	CO4	PO6, PO9	
	• Each track must have the recording date and the track number of the CD. • A song can appear on many (or no) CDs, and be recorded by many different recording artists. The same recording artist might re-record the same song on different CDs. • A CD must have only 1 recording artist appearing on it. • CDs can be released a number of times, and each time the release date and associated number of sales is required. 1. Use this information to design an appropriate ER and relational model. 2. Compile DDL and DML commands on the database created. SQL:- i>Update number of recorded album to 4 for those artist who has recorded only 3. ii>Find all artists who have recorded at least two albums. iii>Find all writers who have only written one song. 3. PL/SQL i>Write Procedure to insert a new Contract into the Contract relation.	CO5	PO10	

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
12.	1> Create the following tables. Hotel (Hotel_No, Name, Address) Room (Room_No, Hotel_No, Type, Price) Booking (Hotel_No, Guest_No, Date_From, Date_To, Room_No) Guest (Guest_No, Name, Address) A. Populate the tables and answer the following query using SQL. 1. List the names and addresses of all guests in London, alphabetically ordered by name. 2. List all double or family rooms with a price below £40.00 per night, in ascending order of price. 3. List the bookings for which no date_to has been specified. 4. How many hotels are there? 5. What is the average price of a room? 6. What is the total revenue per night from all double rooms? 7. How many different guests have made bookings for August? 8. List the details of all rooms at the Grosvenor Hotel, including the name of the guest staying in the room, if the room is occupied. 9. What is the total income from bookings for the Grosvenor Hotel today? 10. List the rooms that are currently unoccupied at the Grosvenor Hotel. B. Design an ER Model for an application where hotels are booked by guests wanting to go on a holiday in India or abroad. Your design should meet all requirements. Map into a relational model.	CO1, CO2	PO1, PO2, PO3, PO5	PSO1, PSO2

Exp. No.	List of Experiments	CO Mapping	PO Mapping	PSO Mapping
	2> Consider the schema for Company Database: EMPLOYEE (SSN, Name, Address, Sex, Salary, SuperSSN, DNo) DEPARTMENT (DNo, DName, MgrSSN, MgrStartDate) DLOCATION (DNo,DLoc) PROJECT (PNo, PName, PLocation, DNo) WORKS_ON (SSN, PNo, Hours)	CO4	PO6, PO9	
	A. Write SQL queries to ………… 1. Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project. 2. Show the resulting salaries if every employee working on the 'IoT' project is given a 10 percent raise. 3. Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department. 4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator). 5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000. B. Write a program in PL/SQL to create a procedure to displays the GCD of nos. C. Write a program in PL/SQL to create a cursor displays the name and salary of each employee in the EMPLOYEES table whose salary is less than that specified by a passed-in parameter value.	CO5	PO10	