SET-3

INDIRA UNIVERSITY, PUNE

SCHOOL OF INFORMATION TECHNOLOGY-MSC (CA)

Term End Examination (2025 Pattern) December – 2025 - Semester – I

Subject Name: Database Systems and SQL **Max. Marks: 50**
Subject Code: 25PCA101T **Time: 2:30 Hrs.**

Instructions

- All Questions are Compulsory.
- Draw neat diagram wherever necessary.

CO #	Cognitive Ability	Course Outcome
CO1	**Remember**	Recall fundamental concepts and principles related to data storage, organization, and management.
CO2	**Understand**	Explain how data models and design techniques represent and structure information.
CO3	**Apply**	Use appropriate tools and techniques to store, query, and update data.
CO4	**Analyze**	Analyze data structures and processes to identify relationships, patterns, and improvements.

Q.1.	**Attempt any 5 out of 7. (2 marks each) (10 Marks)** a) List the different types of database users. b) Tell the meaning of a Weak Entity Set. c) Define the term Functional Dependency. d) Recall any two DDL commands in SQL. e) Define Join and List its types. f) What are Stored Procedures? g) Tell the meaning of Data Abstraction.	**CO1**
Q.2.	**Attempt any 4 out of 6. (5 marks each) (20 Marks)** a) Compare the advantages of DBMS with the File Processing System. b) Compare different types of Attributes with examples. c) Suppose you are given the following requirements for a simple database for the National Hockey League (NHL): the NHL has many teams, each team has a name, a city, a coach, a captain, and a set of players, each player belongs to only one team, each player has a name, a position (such as left wing or goalie), a skill	**CO2**

	level, and a set of injury records, a team captain is also a player, a game is played between two teams (referred to as host_team and guest_team) and has a date (such as May 11th, 1999) and a score (such as 4 to 2). Outline and draw a clean and concise ER diagram for the NHL database. d) Illustrate Normalization and state its advantages. e) Explain SQL aggregate functions with suitable example. f) Demonstrate Group By and Having Clause with examples.	
Q.3.	**Attempt any 2 out of 3. (5 marks each) (10 Marks)** a) Consider the relation scheme R=(A,B,C,D,E,F,G) The set of functional dependencies is F= { A→ BC, C→ G, D→ FG, EG→ F,F→ A}. Solve and check whether attributed set {F} is a super key of the relation R or not b) Construct SQL query for following consider table EMP (empno, deptno, ename ,salary, designation, joiningdate, DOB,city) i) Display average salary of all employees. ii) Display name of employee who earned highest salary. **c)** Utilize the syntax for creating a procedure and illustrate its components with an example.	**CO3**
Q.4.	**Attempt the following question. (10 marks)** Consider the following relations: Customer(cid, cname, city) Product(pid, pname, price) Orders(oid, cid, pid, quantity) Discover appropriate SQL / PL-SQL statements for each of the following tasks: i) Display all customer names and their cities. ii) List customers who have placed more than 3 orders. iii) Display product names ordered by customer 'Ananya'. iv) Write a PL/SQL block to calculate and display total sales amount (price × quantity) for all customers.	**CO4**

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