Name: Enrolment No:	

UPES

End Semester Examination, May 2025

Course: Databases **Semester: 2**
Program: B.C.A. **Time : 03 hrs.**
Course Code: CSEG2073 **Max. Marks: 100**

Instructions: Attempt all questions. Assume any missing data, draw diagrams wherever applicable, provide appropriate examples. Answer as per the marking weightage of the questions.
Any type of calculating/smart device is not permitted.

SECTION A
(5Q X 4M = 20Marks)

S. No.		Marks	CO
Q 1	Briefly explain the role of a DBA.	**4**	**CO1**
Q 2	Illustrate any two commands of DCL?	**4**	**CO2**
Q 3	What is the candidate key?	**4**	**CO2**
Q 4	With a neat illustrative diagram, explain the steps in query processing.	**4**	**CO3**
Q 5	Explain outer join?	**4**	**CO4**
	SECTION B **(4Q X 10M= 40 Marks)**		
Q 6	Using examples of your own briefly discuss the following: (a) Attribute (b) Domain	**10**	**CO1**
Q 7	Briefly explain Trivial and non-Trivial Functional dependencies. Why and how they are important in normalization of data.	**10**	**CO2**
Q 8	Illustrate the Unary operations in Relational Algebra.	**10**	**CO3**

Q 9	Write SQL query to retrieve the names of **all employees** along with the **name of the department** they belong to. Your output should include the employee names and their respective department names.
	
	You have two tables: **Employee** and **Department**.
	• **Employee**:
	  ○ EmpID (Primary Key)
	  ○ EmpName
	  ○ DeptID (Foreign Key referencing Department.DeptID)
		10	**CO4**

	• **Department**:
	  o DeptID (Primary Key)
	  o DeptName
	Insert values and also show the desired..		

	OR		
Q10	As per the schema given below: **Customer(CustID, Custname, Custaddress);** **OrderTable(OrderID, OrderDate, CustID);** **CustID in Customer table, is Primary Key and in OrderTable it is a Foreign Key.** Create table, insert five records with a primary key and foreign key constraints. Explain them in detail.		
SECTION-C (2Q X 20M = 40 Marks)			
Q 11	As per the following schema **Student(SID, Name, Age, DeptID)** **Department(DeptID, DeptName, Location)** **Course(CourseID, CourseName, DeptID)** **Enrolled(SID, CourseID, Grade)** Write the following queries: in (a). SQL statement and (b). Relational Algebra expressions: i. Get names of students who are in 'CSE' Department. ii. Get names of students who are older than 21 years iii. Find the names of students who are enrolled in the course with CourseID='C101'. iv. Find the names of students who got 'A' grade in any course. v. Get names of students who are older than 20 years and in 'CSE' Department and getting 'B' grade.	**20**	**CO4**
Q 12	Given the following schema, find if it is 3NF. If not, convert it stepwise and provide justification. Order(OrderID, OrderDate, CustomerID, CustomerName, CustomerPhone, ProductID, ProductName, ProductPrice, QuantityOrdered)	**20**	**CO3**
	OR		

Q13	Assume any of the relational database scenarios and explain the following with suitable queries: **i. MIN()** **ii. VIEW** **iii. DISTINCT** **iv. GROUP BY**		