Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 16 – 12- 2025 **Time:** 09:30am – 12:30pm

School: SOIS	**Program:** BCA	
Course Code : CSA2503	**Course Name:** RELATIONAL DATABASE MANAGEMENT SYSTEMS	
Semester: III	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**30**	**30**	**40**	**-**	**-**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1.	What is a candidate key?	**2 Marks**	**L1**	**CO1**
2.	What is the purpose of the ER Diagram?	**2 Marks**	**L1**	**CO1**
3.	Differentiate between Logical and Physical Data Independence.	**2 Marks**	**L1**	**CO1**
4.	What is the difference between the DELETE and TRUNCATE?	**2 Marks**	**L1**	**CO1**
5.	Name two aggregate functions in SQL and their use.	**2 Marks**	**L2**	**CO2**
6.	What does the SQL JOIN operation achieve. Illustrate with an example?	**2 Marks**	**L2**	**CO2**
7.	Enumerate and explain the various SQL commands.	**2 Marks**	**L2**	**CO3**
8.	What does Second Normal Form (2NF) ensure? What are the basic functionalities required to convert 1NF to 2NF.	**2 Marks**	**L2**	**CO3**
9.	Define data redundancy and give an example.	**2 Marks**	**L3**	**CO3**
10.	Define Transaction. Exhibit the steps required to transfer a fund of 100 rupees from a bank account A to bank account B.	**2 Marks**	**L3**	**CO3**

Part B

Answer the Questions. **Total Marks 80M**

11.	**a.**	Describe Different Types of Keys in Relational Model with illustration.	**10 Marks**	**L1**	**CO1**
		Or			
12.	**b.**	Discuss Attributes and Types in ER Model with illustration.	**10 Marks**	**L1**	**CO1**

13.	**a.**	What are Joins in Relational Algebra? Differentiate Between Inner Join and Outer Join with example queries.	**10 Marks**	**L1**	**CO1**
		Or			
14.	**b.**	Explain various types of joins in relational algebra and their differences. Differentiate Left join and right join with queries.	**10 Marks**	**L1**	**CO1**

15.	**a.**	Illustrate the basic components of an ER diagram with examples depicting the same with example.	**10 Marks**	**L2**	**CO2**
		Or			
16.	**b.**	What are attributes? Distinguish between simple, composite, derived, and multivalued attributes in ER models.	**10 Marks**	**L2**	**CO2**

17.	**a.**	Discuss the Role and Syntax of SQL Constraints with Practical Examples.	**10 Marks**	**L2**	**CO2**
		Or			
18.	**b.**	Explain Various SQL Operators (Arithmetic, Comparison, Logical, Set) with Examples.	**10 Marks**	**L2**	**CO2**

19.	**a.**	Define and explain Multivalued Dependencies (MVDs). How do they lead to data redundancy? Describe how to remove redundancy using Fourth Normal Form (4NF) with suitable examples.	**20 Marks**	**L2**	**CO3**
		Or			
20.	**b.**	Explain Dependency Preservation and Lossless Join Decomposition with examples. Why are these properties important in database normalization?	**20 Marks**	**L2**	**CO3**

21.	**a.**	Explain the goals and benefits of normalization. Discuss situations where denormalization may be preferred in practical database design.	**20 Marks**	**L2**	**CO3**
		Or			
22.	**b.**	What are the different causes of transaction failure and examine the reasons why recovery is needed?	**20 Marks**	**L2**	**CO3**