O.P.Code: 23CS0512	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year II Semester Regular & Supplementary Examinations March/April-2026

DATABASE MANAGEMENT SYSTEMS

(Common to CAD, CSM, CAI, CSIT, CSE, CCC & CIC)

Time: 3 Hours **Max. Marks: 70**

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	What is an entity? Give an example.	CO1	L1	2M
	b	What are composite attributes? Give an example.	CO1	L1	2M
	c	What is the importance of null values in a database?	CO3	L2	2M
	d	What is the purpose of the WHERE clause in SQL?	CO3	L1	2M
	e	What is the difference between AND and OR logical operators in SQL?	CO4	L1	2M
	f	Name any two SQL functions used to work with date and time.	CO4	L3	2M
	g	Give an example of a functional dependency.	CO5	L1	2M
	h	Why do we convert tables to 1NF?	CO5	L1	2M
	i	What is the Two-Phase Locking (2PL) protocol?	CO6	L1	2M
	j	What is the purpose of a recovery algorithm?	CO6	L1	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	Identify the purpose of Database Systems.	CO1	L2	5M
	b	Discuss about various data models.	CO1	L2	5M
		OR			
3	a	Explain the Entity-Relationship (ER) Model in detail.	CO1	L2	5M
	b	Construct a Centralized and Client Server architecture for the database.	CO1	L6	5M

UNIT-II

4	a	Discuss the significance of domain, attribute, tuple, and relation with examples.	CO3	L2	5M
	b	Illustrate different operations in Relational algebra with an example.	CO3	L6	5M
		OR			
5	a	Compare and contrast Relational Algebra and Relational Calculus.	CO3	L2	5M
	b	Classify Database languages with examples.	CO3	L2	5M

UNIT-III

6	a	What are the different types of operators explain with examples.	CO4	L1	5M
	b	Compare an Arithmetic and Logical Operations with examples.	CO4	L6	5M
		OR			
7	a	Discuss about Complex integrity constraints in SQL.	CO4	L2	6M
	b	Evaluate Order by, Group by and Having Clauses with example.	CO4	L6	4M

UNIT-IV

8	a	Explain about Purpose of Normalization or schema refinement.	CO5	L2	6M
	b	Illustrate the types of anomalies with example.	CO5	L2	4M
		OR			
9	a	Illustrate the types of anomalies with example.	CO5	L3	5M
	b	What is Normalization? Describe the importance of normalization.	CO5	L2	5M

UNIT-V

10	a	Illustrate Concurrent execution of transaction with examples	CO6	L3	5M
	b	What is Schedule? Explain the serial schedule with examples.	CO6	L1	5M
		OR			
11	a	Compare serializibility and non-serializibility	CO6	L2	5M
	b	How do you implement Atomicity and Durability?	CO6	L3	5M

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