

Code: 23CS3402, 23IT3402, 23AM3402, 23DS3402

**II B.Tech - II Semester – Regular Examinations - MAY 2025**

**DATABASE MANAGEMENT SYSTEMS**  
**(Common for CSE, IT, AIML, DS)**

**Duration: 3 hours****Max. Marks: 70**

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

**BL – Blooms Level****CO – Course Outcome****PART – A**

		<b>BL</b>	<b>CO</b>
1.a)	List the role of database administrator.	L2	CO1
1.b)	What is a Data model?	L2	CO1
1.c)	List the design issues in ER diagrams.	L2	CO1
1.d)	Define composite attribute.	L2	CO1
1.e)	What is the purpose of relational algebra?	L2	CO1
1.f)	What is the difference between drop and delete in SQL?	L2	CO1
1.g)	Write about Attributes and its Types.	L2	CO1
1.h)	What are the different problems caused by redundancy?	L2	CO1
1.i)	List the types of serializability.	L2	CO1
1.j)	Give an example for concurrency control validation.	L2	CO1

## PART – B

			BL	CO	Max. Marks
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### UNIT-I

2	a)	Discuss the main characteristics of the database approach and how it differs from traditional file systems.	L2	CO1	5 M
	b)	What are the data models in database system and explain with examples?	L2	CO1	5 M

### OR

3	a)	Describe the three-schema architecture. Why do we need mappings between schema levels?	L2	CO1	5 M
	b)	Explain the difference between Two-tier and Three-tier architectures. Which is better suited for Web applications? why?	L2	CO1	5 M

### UNIT-II

4	a)	Explain the naming conventions and notations used in ER diagram.	L3	CO2	5 M
	b)	Explain Strong Entity Sets and Weak Entity Sets with examples.	L3	CO2	5 M

### OR

5	Draw an E-R diagram for a University Database, identify the key entities and the relationships between them.		L4	CO4	10 M

### UNIT-III

6	<p>Consider the following tables:</p> <p><u>Student_Details</u> (<u>Reg_no</u>, Name, Address, Phone_No, Grade)</p> <p><u>Project_Details</u> (<u>Project_Code</u>, Project_Name, Project_Cost)</p> <p><u>Student_Project</u> (<u>Reg_No</u>, <u>Project_Code</u>)</p> <ul style="list-style-type: none"> <li>i. Write SQL statement to create SQL tables with suitable integrity constraints.</li> <li>ii. Write SQL statement to retrieve the names of the students who works on more than one project.</li> </ul>	L4	CO4	10 M
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**OR**

7	a)	Enumerate various select and projection operations on relations with relational algebra.	L3	CO2	5 M
	b)	Discuss various set operations in relational algebra with examples.	L3	CO2	5 M

### UNIT-IV

8	a)	Explain the process of decomposition using multivalued dependencies with suitable example.	L3	CO3	5 M
	b)	Define normalization. Why do we need to normalize the database?	L3	CO3	5 M

**OR**

9	a)	Describe the process of normalization in order to set the database to 3rd normal form.	L3	CO3	5 M
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	b)	Write about loss-less join decomposition with an example.	L3	CO3	5 M
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## **UNIT-V**

10		Explain in detail about transaction management with an example.	L2	CO1	10 M
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## **OR**

11	a)	What is concurrency control? Explain two phase locking protocol with an example.	L2	CO1	5 M
	b)	Give a note on log based recovery.	L2	CO1	5 M