Code No.: (R22IT403PC) | R22 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) -December- 2025
DATABASE MANAGEMENT SYSTEM
(Common for IT , CSD, CSM)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(10 Marks)**

1. a)	Define DBMS. What are the goals of DBMS?	[1M]
b)	List various symbols used in ER diagrams.	[1M]
c)	Write a note on Domain relational calculus.	[1M]
d)	Distinguish between Super key and Candidate key.	[1M]
e)	What is schema refinement?	[1M]
f)	Discuss about the problems caused by redundancy.	[1M]
g)	What is transaction? Explain its states.	[1M]
h)	Explain about durability of transaction.	[1M]
i)	Discuss about primary and secondary indexing.	[1M]
j)	Describe the differences between ISAM and B+ tree indexes.	[1M]

PART-B **(50 Marks)**

2.a)	Discuss about levels of abstraction in a DBMS.	[5M]
b)	Draw an ER-Diagram for Library Management system.	[5M]
	OR	
3.a)	Give an overview of database languages – DDL and DML.	[5M]
b)	Draw and explain the structure of a DBMS.	[5M]
4.a)	Explain integrity constraints over relations.	[5M]
b)	How to alter, destroy tables and views? Give example queries.	[5M]
	OR	
5.a)	Explain the fundamental operations in relational algebra with examples.	[5M]
b)	Discuss about tuple relational calculus with example.	[5M]
6.	What is meant by normalization? Explain in detail various normal forms with an example.	[10M]
	OR	
7.a)	What is trigger? Explain how to implement triggers in SQL.	[5M]
b)	What is decomposition? Discuss the problems related to decomposition.	[5M]
8.a)	What is locking Protocol? Describe the Strict Two Phase locking Protocol.	[5M]
b)	Explain about multiple granularities.	[5M]
	OR	
9.a)	Explain the time stamp based protocols.	[5M]
b)	Describe concurrent execution of transactions.	[5M]
10.a)	Describe about the Dynamic Index structure.	[5M]
b)	Differentiate between Hash based Indexing and Tree based Indexing.	[5M]
	OR	
11.	What are B + trees? How can we insert, delete and search for an element present in it? Explain with suitable example.	[10M]

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