CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Supply) – April - 2025
DATABASE MANAGEMENT SYSTEMS
(MECH)

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

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 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 (20 Marks)

1. a)	What is data Abstraction?	[2M]
b)	List the advantages of DBMS.	[2M]
c)	Define relational database query.	[2M]
d)	Define tuple variable with its syntax.	[2M]
e)	Define Null Values.	[2M]
f)	Define First Normal Form.	[2M]
g)	Define a transaction.	[2M]
h)	Define timestamp based protocol.	[2M]
i)	Define data on External storage.	[2M]
j)	Define B+ tree index file.	[2M]

PART-B (50 Marks)

2.	Describe the structure of DBMS.	[10M]
	OR	
3.	Compare and contrast file systems with database systems.	[10M]
4.	Discuss about logical database design.	[10M]
	OR	
5.	Illustrate different operations in Relational algebra with an example.	[10M]
6.	Discuss different types of aggregate operators with examples in SQL.	[10M]
	OR	
7.	Define normalization? Explain 2NF, 3NF normal forms.	[10M]
8.	Explain ACID properties and illustrate them through examples.	[10M]
	OR	
9.	Describe Validation-based locking protocols.	[10M]
10.	Compare I/O costs for all file organizations.	[10M]
	OR	
11.	Demonstrate searching a given element in B+ trees? Explain with example.	[10M]

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