

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**MCA I Year II Semester Regular & Supplementary Examinations June/July-2025**  
**DATABASE MANAGEMENT SYSTEM**

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

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a Explain various advantages of using a DBMS. CO1 L2 6M  
b What are the different types of data model? Explain each briefly. CO1 L2 6M

**OR**

- 2 List and explain Mapping Cardinalities with an example ER diagrams. CO1 L2 12M

**UNIT-II**

- 3 a Define Relational Data model and its concepts. CO2 L2 6M  
b List and explain outer join operations with example. CO2 L2 6M

**OR**

- 4 Design an ER diagram for relations Employee and Department with relationships. CO2 L6 12M

**UNIT-III**

- 5 a List out various Data Definition Language commands with Syntax & examples. CO3 L2 6M  
b Explain the following with examples CO3 L2 6M  
i) HAVING ii) GROUP BY iii) Sub – Queries

**OR**

- 6 Consider the following relational schema: CO3 L3 12M  
BATCH1(SID, SNAME, AGE, GENDER, CITY)  
BATCH2(SID, SNAME, AGE, GENDER, CITY)  
Construct SQL Query for the following queries  
i. Find the Batch1 students whose age is more than 25.  
ii. Display the Batch2 students.  
iii. Find the female students from Batch1 or the students living in ptr.  
iv. Display both batch students' details.  
v. Find the names of batch1 students who are living in tpt.

**UNIT-IV**

- 7 a What is Functional Dependencies? CO4 L2 3M  
b Discuss about different functional dependencies with examples. CO4 L2 9M

**OR**

- 8 Explain the Multi-valued dependencies and fourth normal forms. CO4 L2 12M

**UNIT-V**

- 9 a What is a transaction in database system? CO5 L2 3M  
b List and explain the ACID Properties with neat diagram. CO5 L2 9M

**OR**

- 10 Explain about concurrency control based on time-stamp ordering. CO5 L2 12M

**\*\*\* END \*\*\***