



**THAKUR COLLEGE OF  
ENGINEERING & TECHNOLOGY**  
Autonomous College Affiliated to University of Mumbai  
Approved by All India Council of Technical Education (AICTE) and Government of Maharashtra  
Established & managed by Thakur Education Society's Trust, Mumbai  
Recognized by the Ministry of Education, Government of India  
Approved by the Maharashtra State Board of Technical Education, Mumbai  
Approved by the Maharashtra State Board of Secondary Education, Mumbai

## IN-SEMESTER EXAMINATION-I

SE (Semester-III)

SUBJECT – Database Management System

Branch: COMP

Div.: ALL

Duration: 60 Minutes

Instructions –

1. All questions are compulsory.
2. Assume suitable data wherever necessary and state the assumptions made.
3. Diagrams / sketches should be given wherever necessary.
4. Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5. Figures to the right indicate full marks.

Date: 29/08/2023

Timing: 2:00 PM to 3:00 PM

Maximum Marks: 20

Q.1	Answer any 5 of the following questions	Marks	Course Outcomes	Learning Levels
a.	What are the primary advantages of using a DBMS over a File Processing System?	2	CO 1	U
b.	Define the Three-Level Architecture of a database system and mention its components.	2	CO 1	U
c.	Explain the significance of Cardinality in representing Relationships.	2	CO 2	R
d.	Define one-to-one, one-to-many, and many-to-many Relationships in the ER Model.	2	CO 2	R
e.	Provide an example of an aggregate function and explain how the GROUP BY clause is used in conjunction with it.	2	CO 3	R
f.	How do Transaction Control Language (TCL) commands like COMMIT and ROLLBACK help ensure the integrity of database transactions?	2	CO 3	R
g.	Differentiate between INSERT, UPDATE, and DELETE commands in terms of their functions within a database.	2	CO 3	AN
Q.2	a. Describe the roles and responsibilities of a Database Administrator (DBA).	5	CO 1	R
	OR			
b.	Design an ER Diagram for a Library Management System that includes entities like "Book," "Author," and "Borrower." Specify attributes, relationships, and cardinalities.	10	2	AN
Q.3	a. Create an Extended ER Diagram for an online shopping platform. Include entities like "User," "Product," and "Order." Depict inheritance hierarchies and relationships.	10	2	AN
	OR			
b.	Define constraints in a database and elaborate on their significance in maintaining data quality. Differentiate between UNIQUE, PRIMARY KEY, FOREIGN KEY, and CHECK constraints, providing examples for each.	5	CO 3	U