SOMAIYA
V I D Y A V I H A R
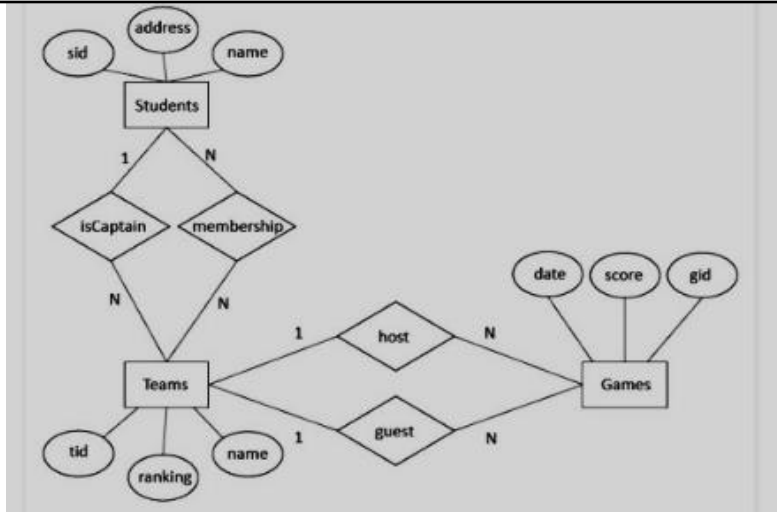
K J Somaiya Institute of Technology
(Formerly known as K J Somaiya Institute of Engineering and Information Technology)
An Autonomous Institute Permanently Affiliated to University of Mumbai.

Somaiya
TRUST

Department of Computer Engineering

Subject: Database Management System

Second Year Sem -III
A.Y. -2025-26 (Odd Sem)
Assignment 1

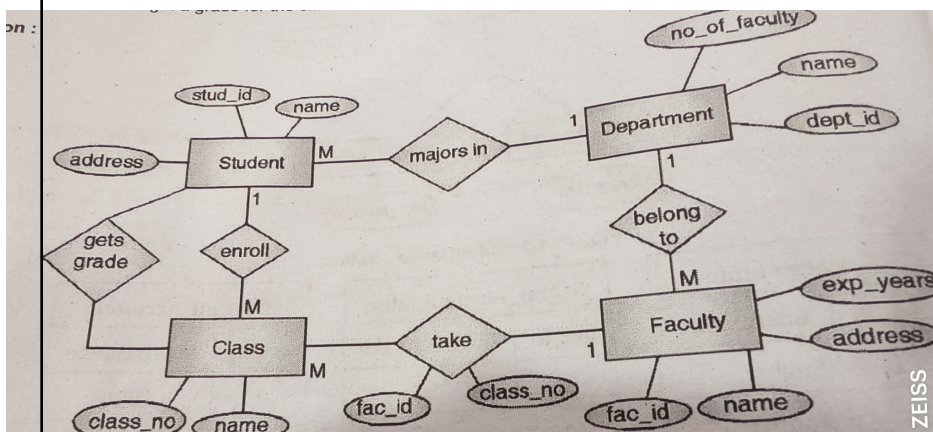| No.	Questions	CO mapped
1	Explain data Independence in detail	CO1
2	Differentiate between a) Generalization and Specialization b) Strong entity and Weak Entity	CO2
3	Design a database for an airline. The database must keep track of customers and their reservations, flights and their status, seat assignments on individual flights, and the schedule and routing of future flights. Construct an EER model which should include: 1. Different types of attributes 2. Relations 3. Cardinality Constraint 4. Participation Constraint 5. Specialization/ Generalization/ Aggregation	CO2
4	Analyze below ER model and convert it into Relational Model. Relational model should include: 1. Mapping of strong and weak entity 2. Mapping of 1:1, 1:N, M:N cardinality 3. Mapping of relationships	CO3

5	Analyze below ER model and convert it into Relational Model.
	
	Relational model should include:
	
	    • Mapping of strong and weak entity
	    • Mapping of 1:1, 1:N, M:N cardinality
	    • Mapping of relationships
	
			CO3

6	For given Schema		CO3

1. Student(SID, Name, Age, Major)
2. Enrolled(SID, CID, Grade)
3. Course(CID, CName, Instructor)

Solve the relational algebra queries for below query

1.Get the names of students who have received a grade of 'A'

2.Get the names of students who are enrolled in *any* course taught by "Prof. Smith"

3: Find the names of students who are not enrolled in any course

4.Find the names of students majoring in 'Computer Science' who are enrolled in the course 'Algorithms'

5.Find all courses taken by the student named 'Alice'