AHMEDABAD UNIVERSITY
School of Engineering and Applied Science
2025-2026 Winter

CSE401 Database Management System
MID-Term Examination
Thursday 26 February 26. 8:00-9:00

Name:	Roll no.	A	U	2							Marks 20

Write your answers in the answer book.

All the questions are compulsory.

Q.1 Design an Entity–Relationship (ER) diagram for a Magazine Publishing Company based on the following requirements. Include all the entities and relationships between the entities. Specify primary keys clearly. Mention correct cardinalities with proper participation. Show strong/weak relationships and entities wherever applicable. Write assumptions (if any) clearly which should be logical. 6

A magazine company publishes several magazines. Each magazine has a unique magazine ID, title, category, language, and price per issue. The company has many subscribers. Each subscriber has a unique member ID, name, address, email, phone number, and date of registration. A subscriber can subscribe to one or more magazines. A magazine can have many subscribers subscribing to it. For each subscription, subscription start date, end date, and subscription type (Monthly/Quarterly/Yearly) is stored. Each magazine publishes many issues. Each issue has an issue number (unique within a magazine), publication date, and total copies printed. The company employs many employees. Each employee has an employee ID, name, designation, salary, and department. An employee may work on multiple magazines, and a magazine may have multiple employees working on it. Subscribers make payments for their subscriptions. Each payment has a payment ID, payment date, amount, and payment mode. A payment is made by a subscriber but may cover multiple subscriptions. A payment of one magazine should be done fully. Payment in installment is not allowed.

Q.2 Refer "Drivers" table. Write outputs (write outputs only, don't explain) of the following queries. 6

1. `select count(*) from drivers d1, drivers d2 where d1.district=d2.district and d1.Aadhaar_No!=d2.Aadhaar_No;`
2. `select name from drivers where Aadhaar_No between 123456789012 and 123456789015;`
3. `Select count(district) from drivers group by district,Vehicle_No having count(*)>=1;`

Table: Drivers

License_No	Aadhaar_No	Vehicle_No	Name	Phone	Birth_Date	District
DL101	123456789012	AS01AB1234	Ranjit Deka	9435012345	01-01-1995	Nalbari
DL102	123456789013	AS11CD5678	Pallabi Saikia	9706512346	02-02-1994	Charaideo
DL103	123456789014	AS23EF9012	Diganta Gogoi	9864012347	03-03-1996	Kamrup Metro
DL104	123456789015	AS02GH3456	Bornali Bora	9435212348	12-05-1993	Kamrup Metro
DL105	123456789016	AS03JK7890	Jitul Kalita	9706612349	23-08-1992	Sonitpur
DL106	123456789017	AS05LM1122	Manashree Bhuyan	9864112350	09-11-1997	Kamrup Metro
DL107	123456789018	AS06NP3344	Hemanta Borthakur	7002612351	17-04-1991	Lakhimpur
DL108	123456789019	AS07QR5566	Rupam Hazarika	8638212352	30-12-1998	Kamrup Metro

Q.3 For the table "Drivers" given in Q.2, mention all the candidate key(s), primary key and alternate key(s). Also, mention four super keys. 4

Q.4 For the table "Challan" given bellow, answer the following questions. 4

1. Identify the primary key.
2. List all Full functional dependencies of the table.
3. List all Partial dependencies of the table.
4. Is there any transitive dependency in the table? If yes, write it.

Challan_No	License_No	Violation	Fine_Amount	Date_Of_Violation	Paid	License_Issue_Date	License_Expire_Date
CH001	DL101	Over Speeding	500	10-01-2024	TRUE	01-01-2015	01-01-2025
CH002	DL101	Signal Jump	300	15-02-2024	FALSE	01-01-2015	01-01-2025
CH003	DL101	No Helmet	200	10-01-2024	TRUE	01-01-2015	01-01-2025
CH001	DL102	Illegal Parking	400	20-01-2024	TRUE	02-02-2014	02-02-2024
CH002	DL102	Over Speeding	500	25-02-2024	FALSE	02-02-2014	02-02-2024
CH001	DL102	Red Light Violation	350	18-03-2024	TRUE	02-02-2014	02-02-2024
CH002	DL103	No Seatbelt	250	30-01-2024	FALSE	03-03-2016	03-03-2026
CH003	DL103	Over Speeding	500	12-02-2024	TRUE	03-03-2016	03-03-2026

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