Instructions:

I. Create tables according to schema and instruction. Insert record in tables such a way that there should be some record as output for each query questions.
II. Queries will be evaluated if and only schema descriptions and table constructions is correct. 0 marks will be awarded otherwise.

1. The following relations keep track of airline flight information:

56 Marks

| Table Constructions,	6 Marks
Insertion	5
15 Query	15×3 = 45 Marks
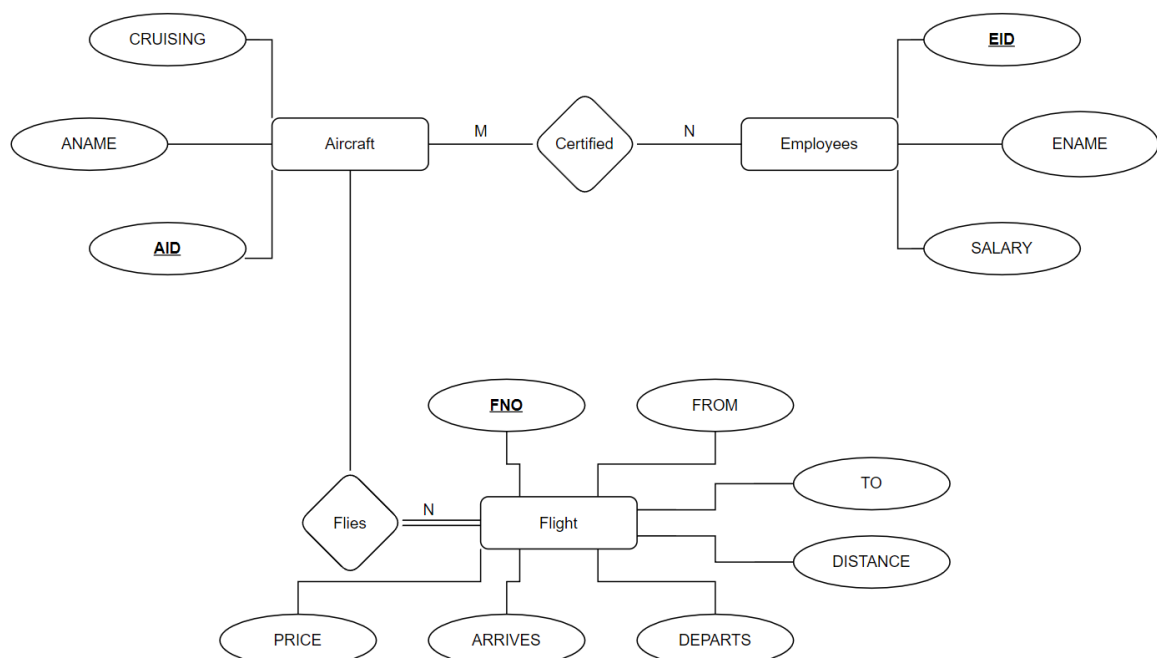
Note that the Employees relation describes pilots and other kinds of employees as well; every pilot is certified for some aircraft, and only pilots are certified to fly. Write each of the following queries in SQL.

A. Define a table constraint on Employees to ensure that every employee makes at least $500.
B. Describe Schema description of above ER Diagram.
I. Find the names of aircraft such that all pilots certified to operate them have salaries more than $80,000.
II. For each pilot who is certified for more than three aircraft, find the eid and the maximum cruisingrange of the aircraft for which she or he is certified.
III. Find the names of pilots whose salary is less than the price of the cheapest route from Los Angeles to Honolulu.
IV. For all aircraft with cruisingrange over 1000 miles, find the name of the aircraft and the average salary of all pilots certified for this aircraft.
V. Find the names of pilots certified for some Boeing aircraft.
VI. Find the aids of all aircraft that can be used on routes from Los Angeles to Chicago.
VII. Identify the routes that can be piloted by every pilot who makes more than $100,000.
VIII. Print the enames of pilots who can operate planes with cruisingrange greater than 3000 miles but are not certified on any Boeing aircraft.
IX. A customer wants to travel from Madison to New York with no more than two changes of flight. List the choice of departure times from Madison if the customer wants to arrive in New York by 6 p.m.
X. Compute the difference between the average salary of a pilot and the average salary of all employees (including pilots).
XI. Print the name and salary of every nonpilot whose salary is more than the average salary for pilots.
XII. Print the names of employees who are certified only on aircrafts with cruising range longer than 1000 miles.
XIII. Print the names of employees who are certified only on aircrafts with cruising range longer than 1000 miles, but on at least two such aircrafts.
XIV. Print the names of employees who are certified only on aircrafts with cruising range longer than 1000 miles and who are certified on some Boeing aircraft.

2. Consider the following relations:

44 Marks.

Table Constructions	6 Marks
Insertion	5 Mark
15 Query	11×3 = 33 Marks
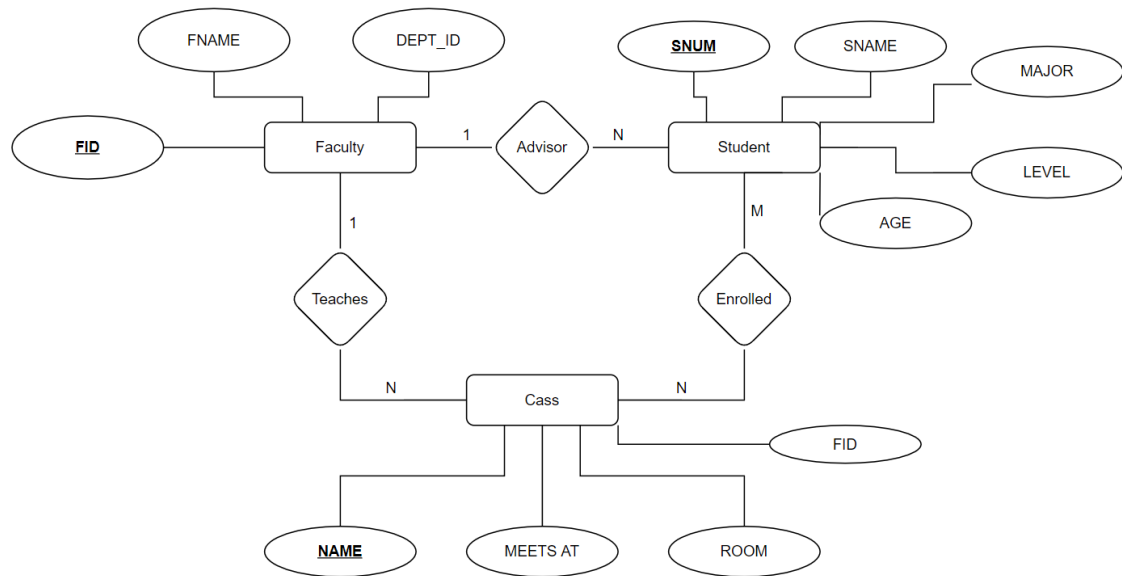
The meaning of these relations is straightforward; for example, enrolled has one record per student-class pair such that the student is enrolled in the class.

a. Define a table constraint on student to ensure that every student age is more than 14 year and less than 28 years.

b. Define a table constraint that one student can take maximum 5 course.

c. Describe schema Descriptions of above ER Diagrams.

Write the following queries in SQL. No duplicates should be printed in any of the answers.

I. Find the names of all Juniors (level = JR) who are enrolled in a class taught by I. Teach.

II. Find the age of the oldest student who is either a history major or enrolled in a course taught by I. Teach.

III. Find the names of all classes that either meet in room R128 or have five or more students enrolled.

IV. . Find the names of all students who are enrolled in two classes that meet at the same time.

V. Find the names of faculty members who teach in every room in which some class is taught.

VI. Find the names of faculty members for whom the combined enrolment of the courses that they teach is less than five.

VII. For each level, print the level and the average age of students for that level.
VIII. For all levels except JR, print the level and the average age of students for that level.
IX. For each faculty member that has taught classes only in room R128, print the faculty member's name and the total number of classes she or he has taught.
X. Find the names of students enrolled in the maximum number of classes.
XI. Find the names of students not enrolled in any class.