

# SQL PYQ Discussion: Part 1

Special class

# GATE-1999

Which of the following is/are correct?

- A. An SQL query automatically eliminates duplicates
- B. An SQL query will not work if there are no indexes on the relations
- C. SQL permits attribute names to be repeated in the same relation
- D. None of the above

# GATE-1999

Consider the set of relations

- EMP (Employee-no. Dept-no, Employee-name, Salary)
- DEPT (Dept-no. Dept-name, Location)

Write an SQL query to:

- a) Find all employees names who work in departments located at 'Calcutta' and whose salary is greater than Rs.50,000.
- b) Calculate, for each department number, the number of employees with a salary greater than Rs. 1,00,000.

# GATE-2000

Given relations  $r(w, x)$  and  $s(y, z)$  the result of

```
select distinct w, x  
from r, s
```

is guaranteed to be same as  $r$ , provided.

- |   |   |
|---|---|
| A. $r$ has no duplicates and $s$ is non-empty | B. $r$ and $s$ have no duplicates             |
| C. $s$ has no duplicates and $r$ is non-empty | D. $r$ and $s$ have the same number of tuples |



# GATE-2000

In SQL, relations can contain null values, and comparisons with null values are treated as unknown. Suppose all comparisons with a null value are treated as false. Which of the following pairs is not equivalent?

A.  $x = 5$     $\text{not}(\text{not}(x = 5))$

B.  $x = 5$     $x > 4$  and  $x < 6$ , where  $x$  is an integer

C.  $x \neq 5$     $\text{not}(x = 5)$

D. none of the above

Consider a relation `geq` which represents "greater than or equal to", that is,  $(x, y) \in \text{geq}$  only if  $y \geq x$ .

```
create table geq
(
    ib integer not null,
    ub integer not null,
    primary key ib,
    foreign key (ub) references geq on delete cascade
);
```

Which of the following is possible if tuple  $(x, y)$  is deleted?

- A. A tuple  $(z, w)$  with  $z > y$  is deleted
- B. A tuple  $(z, w)$  with  $z > x$  is deleted
- C. A tuple  $(z, w)$  with  $w < x$  is deleted
- D. The deletion of  $(x, y)$  is prohibited

# GATE-2001

Consider a relation *examinee* (*regno*, *name*, *score*), where *regno* is the primary key to *score* is a real number. Write an SQL query to list the *regno* of examinees who have a score greater than the average score.

# GATE-2001

Consider a relation `examinee (regno, name, score)`, where `regno` is the primary key to `score` is a real number.

Suppose the relation `appears (regno, centr_code)` specifies the center where an examinee appears. Write an SQL query to list the `centr_code` having an examinee of score greater than 80.



Consider the set of relations shown below and the SQL query that follows.

Students: (Roll\_number, Name, Date\_of\_birth)

Courses: (Course\_number, Course\_name, Instructor)

Grades: (Roll\_number, Course\_number, Grade)

```
Select distinct Name
from Students, Courses, Grades
where Students.Roll_number=Grades.Roll_number
and Courses.Instructor = 'Korth'
and Courses.Course_number = Grades.Course_number
and Grades.Grade = 'A'
```

Which of the following sets is computed by the above query?

- A. Names of students who have got an A grade in all courses taught by Korth
- B. Names of students who have got an A grade in all courses
- C. Names of students who have got an A grade in at least one of the courses taught by Korth
- D. None of the above

The employee information in a company is stored in the relation

- Employee (name, sex, salary, deptName)

Consider the following SQL query

```
Select deptName
  From Employee
 Where sex = 'M'
 Group by deptName
 Having avg(salary) >
        (select avg (salary) from Employee)
```

It returns the names of the department in which

- A. the average salary is more than the average salary in the company
- B. the average salary of male employees is more than the average salary of all male employees in the company
- C. the average salary of male employees is more than the average salary of employees in same the department
- D. the average salary of male employees is more than the average salary in the company



A relational database contains two tables student and department in which student table has columns roll\_no, name and dept\_id and department table has columns dept\_id and dept\_name. The following insert statements were executed successfully to populate the empty tables:

```
Insert into department values (1, 'Mathematics')
Insert into department values (2, 'Physics')
Insert into student values (1, 'Navin', 1)
Insert into student values (2, 'Mukesh', 2)
Insert into student values (3, 'Gita', 1)
```

How many rows and columns will be retrieved by the following SQL statement?

```
Select * from student, department
```

A. 0 row and 4 columns

B. 3 rows and 4 columns

C. 3 rows and 5 columns

D. 6 rows and 5 columns

A table T1 in a relational database has the following rows and columns:

Roll no.	Marks
1	10
2	20
3	30
4	NULL

The following sequence of SQL statements was successfully executed on table T1.

```
Update T1 set marks = marks + 5  
Select avg(marks) from T1
```

What is the output of the select statement?

- A. 18.75                      B. 20                      C. 25                      D. Null



Consider two tables in a relational database with columns and rows as follows:

Table: Student

Roll_no	Name	Dept_id
1	ABC	1
2	DEF	1
3	GHI	2
4	JKL	3

Table: Department

Dept_id	Dept_name
1	A
2	B
3	C

Roll\_no is the primary key of the Student table, Dept\_id is the primary key of the Department table and Student.Dept\_id is a foreign key from Department.Dept\_id

What will happen if we try to execute the following two SQL statements?

- i. update Student set Dept\_id = Null where Roll\_no = 1
- ii. update Department set Dept\_id = Null where Dept\_id = 1

- A. Both i and ii will fail
- B. i will fail but ii will succeed
- C. i will succeed but ii will fail
- D. Both i and ii will succeed