Q1
0 Points

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Understanding this, I declare I shall not give, use or receive unauthorized aid in this examination.

Signature (Specify your name and surname as your signature)

Yıldırım Bayazıt AKYÜREK

While answering the following questions, please consider the concepts that we discussed in our lectures unless stated otherwise.

Q2 Delete
11 Points

Which of the following is not true about removing rows from a table?

- ○ You can use a subquery in a DELETE statement.
- ○ Specific rows are deleted based on the WHERE clause condition.
- ◉ A statement like, DELETE, would cause deletion of the table

from the database.

- All of the above.
- If you try to delete a record related to an integrity constraint, it raises an error.

Q3 SQL-1

22 Points

Consider the employee database given below, where the primary keys are underlined. Find the company that has the smallest payroll.

---

employee (*ID*, *person_name*, *street*, *city*)
works (*ID*, *company_name*, *salary*)
company (*company_name*, *city*)
manages (*ID*, *manager_id*)

-
```
select company_name
from works as w, company as c
where c.company_name = w.company_name
 and salary < (select all (salary)
               from works as w, employee as e
                where e.ID =w.ID)
```

-
```
select company_name
from works as T, employee as E
where E.ID = T.ID
and salary < (select avg (salary)
              from works as S
               where T.company_name = S.company_name)
```

-
```
select company_name
from works
group by company_name
having sum (salary) <= all (select sum (salary)
                            from works
                            group by company_name)
```

-
```
select company_name
from employee as e, company as c
```

```
where e.ID = c.ID
and sum (salary) <= all (sum (salary)
```

○
```
select company_name
from works as w, company as c
group by company_name
having avg (salary) <= all (select sum (salary)
                            from company
                            group by company_name
                            where w.company_name=c.company_name)
```

Q4

30 Points

Given the following schema

Suppliers$(\underline{sid : integer}, sname : string, address : string)$

Parts$(\underline{pid : integer}, pname : string, color : string)$

Catalog$(\underline{sid : integer, pid : integer}, cost : real)$

Consider the following list of queries:

A. Find the sids of suppliers who supply some red part and some green part.

B. Find the sids of suppliers who supply every red part or supply every green part.

C. Find the names of suppliers who supply some red part.

D. Find the sids of suppliers who supply some red or green part.

E. Find the sids of suppliers who supply every red or green part.

and the list of SQL statements:

1.

```
SELECT S.sname
FROM Suppliers S, Parts P, Catalog C
WHERE P.color='red' AND C.pid=P.pid AND C.sid=S.sid
```

2.

```
SELECT C.sid
FROM Catalog C, Parts P
WHERE (P.color = ‘red’ OR P.color = ‘green’)
      AND P.pid = C.pid
```

3.

```
SELECT C.sid
FROM Parts P, Catalog C
WHERE P.color = ‘red’ AND P.pid = C.pid
      AND EXISTS ( SELECT P2.pid
                   FROM Parts P2, Catalog C2
                   WHERE P2.color = ‘green’ AND C2.sid = C.sid
                   AND P2.pid = C2.pid )
```

4.

```
SELECT C.sid
FROM Catalog C
WHERE NOT EXISTS (SELECT P.pid
                  FROM Parts P
                  WHERE (P.color = ‘ red’ OR P.color = ‘green’)
                        AND (NOT EXISTS (SELECT C1.sid
                                         FROM Catalog C1
                                         WHERE C1.sid = C.sid
                                         C1.pid = P.pid)))
```

5.

```
SELECT C.sid
FROM Catalog C
WHERE (NOT EXISTS (SELECT P.pid
                   FROM Parts P
                   WHERE P.color = ‘red’ AND
                         (NOT EXISTS (SELECT C1.sid
                                      FROM Catalog C1
                                      WHERE C1.sid = C.sid AND
                                            C1.pid = P.pid))))
       OR ( NOT EXISTS (SELECT P1.pid
                        FROM Parts P1
                        WHERE P1.color = ‘green’ AND
                              (NOT EXISTS (SELECT C2.sid
                                           FROM Catalog C2
```

```
                                        WHERE C2.sid = C.sid
                                        C2.pid = P1.pid))))
```

Q4.1
6 Points

What is the SQL statement for the query A?

- ○ 1
- ○ 2
- ◉ 3
- ○ 4
- ○ 5

Q4.2
6 Points

What is the SQL statement for the query B?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ◉ 5

Q4.3
6 Points

What is the SQL statement for the query C?

- ◉ 1
- ○ 2

- ○ 3
- ○ 4
- ○ 5

Q4.4
6 Points

What is the SQL statement for the query D?

- ○ 1
- ◉ 2
- ○ 3
- ○ 4
- ○ 5

Q4.5
6 Points

What is the SQL statement for the query E?

- ○ 1
- ○ 2
- ○ 3
- ◉ 4
- ○ 5

Q5 True/False Questions
7 Points

Q5.1
1 Point

The query engine will very likely rewrite your query before it executes it.

- (●) True
- ( ) False

Q5.2
1 Point

Duplication of data requires maintenance to avoid inconsistency.

- (●) True
- ( ) False

Q5.3
1 Point

There may be several execution plans for the same query.

- (●) True
- ( ) False

Q5.4
1 Point

Introducing some redundancy while creating database schemas are always avoided.

- ( ) True

◉ False

Q5.5
1 Point

To obtain the most efficient database design, one should always use auto-incremented values as primary keys.

○ True

◉ False

Q5.6
1 Point

"A except all B" returns a set of all items present in A, and absent in B.

○ True

◉ False

Q5.7
1 Point

Inequivalent queries may be identical.

○ True

◉ False

Quiz 2

GRADED

STUDENT
YILDIRIM BAYAZIT AKYÜREK

TOTAL POINTS
70 / 70 pts

QUESTION 1
(no title) **0** / 0 pts

QUESTION 2
Delete **11** / 11 pts

QUESTION 3
SQL-1 **22** / 22 pts

QUESTION 4
(no title) **30** / 30 pts

4.1 (no title) **6** / 6 pts

4.2 (no title) **6** / 6 pts

4.3 (no title) **6** / 6 pts

4.4 (no title) **6** / 6 pts

4.5 (no title) **6** / 6 pts

QUESTION 5
True/False Questions **7** / 7 pts

5.1 (no title) **1** / 1 pt

5.2 (no title) **1** / 1 pt

5.3 (no title) **1** / 1 pt

5.4 (no title) **1** / 1 pt

5.5 (no title) **1** / 1 pt

5.6	(no title)	**1** / 1 pt
5.7	(no title)	**1** / 1 pt