Q1
0 Points

Q1.1
0 Points

It is a violation of the Academic Integrity Code to look at any reference material other than your textbook and lecture notes, or to give inappropriate help to someone or to receive unauthorized aid by someone in person or electronically via messaging apps such as WhatsApp. Academic Integrity is expected of all students of Hacettepe University at all times, whether in the presence or absence of members of the faculty. Do NOT sign nor take this exam if you do not agree with the honor code.

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 implementations that we discussed in our lectures unless stated otherwise.

Q2
30 Points

Q2.1
5 Points

Functions and procedures can be defined using SQL procedural extensions that allow iteration and conditional (if-then-else) statements.

- ○ True
- ◉ False

Q2.2

5 Points

Ranking cannot be done within partitions of the data.

- ○ True
- ◉ False

Q2.3

5 Points

SQL is alone enough to solve any problem that can be solved computationally.

- ○ True
- ◉ False

Q2.4

5 Points

Natural joins may cause joining of irrelevant tuples.

- ◉ True
- ○ False

Q2.5
5 Points

A natural join is a theta join using the equality operator.

- ○ True
- ◉ False

Q2.6
5 Points

Picking auto-incremented values as primary keys is never a good idea.

- ○ True
- ◉ False

Q3
20 Points

Consider the following schema

student(ID, name, dept name, tot cred)
instructor(ID, name, dept name, salary)
advisor(student_ID, instructor_ID)

Express the following query in SQL using no subqueries and no set operations. *Hint: consider using only join and where clause*

```
SELECT ID
FROM student
EXCEPT
SELECT student_ID
```

```
SELECT student_ID
FROM advisor
WHERE instructor_ID IS NOT NULL
```

```
select student.ID
from student left outer join advisor on student.ID =
advisor.student_ID
where instructor_id is null;
```

Q4

10 Points

In JDBC, statements written in SQL are interpreted at

- (•) Run time
- ( ) Processing time
- ( ) Compile time
- ( ) Stream time
- ( ) Build time

Q5

10 Points

The process of switching from coarser granularity level data to finer-level data is described as

- (•) Drill down
- ( ) Drill up
- ( ) Roll up
- ( ) Roll down
- ( ) Roll back

Q6
10 Points

The operation of swapping the dimensions of a cross-tabulation is called as

- (●) Pivoting
- ( ) Slicing
- ( ) Dicing
- ( ) Drill down
- ( ) Roll up

Q7
20 Points

Consider the following schema

classroom (building, room number, capacity)
section (course_id, sec_id, semester, year, building, room number, time_slot_id)

Which query is equivalent to the query below

```
select *
from section natural join classroom
```

- (●)
```
select *
from section join classroom using (building, room_number)
```
- ( )
```
select course_id
from section left outer join classroom using (building)
```
- ( )
```
select *
from section s
where not exists
```

```
(select
from classroom c
where s.building = c.building and
        s.course_id is not null)
```

- select *
  from section **right outer join** classroom **using** (room_number)

- **create view** section (*course_id, sec_id, semester, year*)
  select *
  from section **natural join** classroom
  group by year

Quiz 3

● GRADED

STUDENT
YILDIRIM BAYAZIT AKYÜREK

TOTAL POINTS
95 / 100 pts

QUESTION 1

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

1.1 (no title) **0** / 0 pts

QUESTION 2

(no title) **25** / 30 pts

2.1 (no title) **0** / 5 pts

2.2 (no title) **5** / 5 pts

2.3 (no title) **5** / 5 pts

2.4 (no title) **5** / 5 pts

2.5 (no title) **5** / 5 pts

2.6 (no title) **5** / 5 pts

QUESTION 3

(no title) **20** / 20 pts

QUESTION 4

(no title) **10** / 10 pts

QUESTION 5

(no title) **10** / 10 pts

QUESTION 6

(no title) **10** / 10 pts

QUESTION 7

(no title) **20** / 20 pts