Name: _____
Score: _____ / _____

Quiz 5 - Fall 2021

Part 1

Assume you have the following table: R with attributes: {A, B, C, D, E, F, G, H, I, J, K} and the following dependencies: { (B, D, G --> C, E), (B, D --> K), (B-->A, F), (G-->H), {H-->I}, {I-->J}}

How many tables, in total, will there be when you put R into second normal form?

- A. 1
- B. 2
- C. 3
- D. 4
- E. More than 4

Answer Point Value: 1.0 points
Answer Key: D

Assume you have the following table: R with attributes: {A, B, C, D, E, F, G, H, I, J, K} and the following dependencies: { (B, D, G --> C, E), (B, D --> K), (B-->A, F), (G-->H), {H-->I}, {I-->J}}

How many tables, in total, will there be when you put R into third normal form?

- A. 3
- B. 4
- C. 5
- D. 6
- E. more than 6

Answer Point Value: 1.0 points
Answer Key: D

Assume you have the following table: R with attributes: {A, B, C, D, E, F, G, H, I, J, K} and the following dependencies: { (B, D, G --> C, E), (B, D --> K), (B-->A, F), (G-->H), {H-->I}, {I-->J}}

K is partially functionally dependent on B, D?

- True
- False

Answer Point Value: 1.0 points
Answer Key: False

LicencePlateNumber --> CarColour

- True
- False

Answer Point Value: 1.0 points
Answer Key: True

Which of the following granualarities of locking will be the least restrictive to other transactions that are waiting for a locked item?

- A. Database Level
- B. Table Level
- C. RowLevel
- D. Field Level
- E. Page Level

Answer Point Value: 1.0 points
Answer Key: D

Assume we have two transactions T1 and T2. We could have a schedule S1 which performs all of T1 then all of T2. Or we could have another schedule S2, which performs all of T2 then all of T1. If S1 results in different values in the database than S2 would have given, S1 and/or S2 did NOT represent serializable schedules.

- True
- False

Answer Point Value: 1.0 points
Answer Key: False

Assume you create a transaction called T1 that requests the average of the prices for all the items in your warehouse. After T1 has started running, T2 starts running to increase all the item prices by 5%. Thus, your final average represents the average of some prices with the old value and some with the new value. This type of transaction corruption is referred to as:

- A. A Lost Update
- B. Uncommitted Data
- C. Inconsistent Retrieval
- D. It is okay for a transaction to allow this to happen, as long as it is only reading the data and reporting the results without updating the data (Thus, transaction T1 is not a problem)

Answer Point Value: 1.0 points
Answer Key: C

Accepted characters: numbers, decimal point markers, sign indicators (-), spaces (e.g., as thousands separator, 5 000), "E" or "e" (used in scientific notation). **NOTE:** For scientific notation, a period MUST be used as the decimal point marker.

Assuming you have three transactions: T1, T2 and T3.
Then, the number of possible serial schedules that exist is: ____.

Answer Point Value: 1.0 points
Answer Key: 6

Assume we have a sparse index on the Price attribute in a Products table. Which of the following SQL statements would be speed up the query AND give the correct results by ONLY referencing the index file (and never touching the actual product table). Check all that apply.

- [ ] A. SELECT MIN(price) FROM product;
- [ ] B. SELECT MAX(price) FROM product;
- [ ] C. SELECT AVERAGE(price) FROM product;
- [ ] D. SELECT SUM(price) FROM product;
- [ ] E. SELECT COUNT(price) FROM product;

Answer Point Value: 2.0 points
Answer Key: A,B

The following table is not normalized:

WesternStudent

StudentNumber	FirstName	LastName	EmailAddresses
251112345	Michael	Bluth	mblu@uwo.ca, jason@gmail.com
251112346	Maeby	Funke	mfun@uwo.ca
251112347	Gob	Bluth	gblu@uwo.ca, willy@yahoo.com, arn22@outlook.com

- ○ True
- ○ False

Answer Point Value: 1.0 points
Answer Key: True

When using Time Stamping, which of the following Time Stamps do you need to save in a situation where *Transaction T* is trying to use the piece of data called *Quantity*? (Select all that apply)

- ☐ A. Start Time of Transaction T
- ☐ B. Read Time of (Quantity)
- ☐ C. Write Time of (Quantity)
- ☐ D. End Time of Transaction T

Answer Point Value: 2.0 points
Answer Key: A,B,C

Which operation should be closest to the leaves of a query optimization tree?

- ○ A. Cartesian Product
- ○ B. Join
- ○ C. Projection
- ○ D. Selection

Answer Point Value: 1.0 points
Answer Key: D

This is a free mark. I am just wondering how you felt about the peer marking. Please select the statement that most describes your feelings about the peer marking.

- A. I hated the peer marking, it added nothing to the course nor to my understanding of the material.
- B. I was indifferent to the peer marking. I neither hated nor loved it, I just did it because Laura told me to do it.
- C. I actually didn't mind doing the peer marking. It did help me understand the material a little bit better and it helped me get a feel for how my classmates were understanding the material compared to me.
- D. I sort of liked the peer marking. It helped me understand the material better AND I appreciated the fact that my classmates couldn't really cheat for this part of the assignment. Everyone had to do their own marking so this part of the assignments was very fair to everyone in the class.

Answer Point Value: 1.0 points
Answer Key: A,B,C,D

Laura is happy today because:

- A. This is the last quiz she has to make up.
- B. Dancing With The Stars is on tonight (her shameful secret...yes, she watches Dancing With The Stars)
- C. Our exam is early in the exam season so she will actually get to enjoy most of December.
- D. She could careless which answer you pick for this question, you will get it correct and thus a free mark, her Christmas gift to you! :-)

Answer Point Value: 1.0 points
Answer Key: A,B,C,D