

Course no : SWE 5428

College of Engineering

Student No: \_\_\_\_\_

Course title: Advanced  
Database

### Mid Exam

Student Name: \_\_\_\_\_

Exam Time: 1 Hour

1st Semester 2014/2015

Date: 25/11/2014

No of Questions: 3 questions

Total Grade: 30

Try to Answer All Questions

Open Book: No

Using Computer: No

Using Calculator: No

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#### Question 1: 3 points

1. What is a database transaction? (1pt)
2. What are the two operations of database transaction control? ( 1 pts.)
3. Give an example of a use case where we need database transaction control. (1pts.)

#### Question 2: 10 points

1. What does JDBC stand for? (1 pt.)
2. What is JDBC? (1 pt.)
3. How does it connect to the database? (1 pt.)
4. Explain the steps of executing an query using JDBC in Java. You don't need to write code. (5pts.)
5. What is class reflection in Java? (1 pt)
6. Where do we use reflection in a JDBC connection? (1pt)

**Question 3: 10 points**

1. Why do we need to handle exceptions when dealing with JDBC? (2 pts.)
2. What is prepared statement? (1 pts.)
3. What are the advantages of using prepared statement against normal SQL statement? (2pts.)
4. Why do we need to close the JDBC connection after we finish a transaction? Explain your answer. (5 pts.)

**Question 4: 7 points**

Explain the design decision made about the entity-to-entity relationship in creating the following database schema.

1. Customers – Works:
2. Works – Assets:
3. Assets – AssetType:
4. Works – WorkAllocations:
5. WorkAllocations – WorkDetails:
6. WorkAllocations – Resources:
7. Asset Type – Resources:

