Shot Answer:

Answer the following questions with complete sentences in your own words. You are encouraged to conduct your own research online or through other methods before answering the questions. If you research online, please consult multiple sources before you write down your answers. You are expected to be able to explain your answers in detail (Provide examples to each question).

1. What is JDBC and How does it work?
2. What are steps to connect to database via JDBC?
3. What is JDBC driver and what are common types of JDBC?
4. What are JDBC API Components? (Interfaces and Classes)
5. What are JDBC statements? List all types of JDBC statements and their usage.
6. What are the differences between execute, executeQuery, and executeUpdate?
7. What is the role of the JDBC DriverManager class?
8. What is Transaction Management?
9. What is Callable interface in JDBC? Give an example.

Coding Questions:

Write code in Java to solve following problems. Please write your own answers. You are highly encouraged to present more than one way to answer the questions. Please follow best practice when you write the code so that it would be easily readable, maintainable, and efficient. Clearly state your assumptions if you have any. You may discuss with others on the questions, but please write your own code.

1. Implement Following operations as a single application
   - Insert
   - Delete
   - Update
   - Display all records
   - Get

You have to display a menu to the customer, let customer choose the option whatever he wanted to do, depending on the customer option, you have to run the corresponding methods. [Insert a new record in data base table, update the existing record, delete etc on student object]

2. Write a java program that loads names and phone numbers from a database table where It takes a name or phone number as input and prints the corresponding other value from the database table. (Hint: use hash tables to load the data from the database table).

Sample Output:
Table with name and mobile number,
When you run the code, there should be a menu
1. Search by name
2. Search by mobile number
3. Exit
Enter your option 1, 2, 3   [if you enter 1]
Enter the name,
XXXX [search the data, which is already loaded into hashtable and return a message that its available or not]

Enter option 1, 2, 3 [if you enter 2]
Enter the mobile number
9999[search the data, which is already loaded into hashtable and return a message]

3. Write a java program that takes tab separated data (one record per line) from a text file and inserts them into database
Eg. A file looks like as follows: (Each column is separated a tab)
PP 2222 19 BS 2001-12-07

II 3333 20 Master 2002-12-07

BB 5555 11 PHD 2003-12-07

ZZ 1111 44 Master 2004-12-07

SS 2222 11 PHD 2005-12-07

QQ 3333 88 BS 2006-12-07

DD 4444 99 PHD 2007-12-07

4. Hotel Project — (See doc requirement)

Note: Please try to use as many JDBC methods as possible. Only one statement, execute method or result set is not acceptable.