Building Database Applications with JDBC - 0

Given structure of MESSAGES table:

```
MESSAGES (msg1 varchar(100), msg2 varchar(100))
```

MESSAGES table contains below records:

```
'Happy New Year!', 'Happy Holidays!'
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "DELETE FROM MESSAGES";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt = con.createStatement())
        {
            System.out.println(stmt.execute(query));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - false

B - 0

C - true

D - 1

Building Database Applications with JDBC - 1

Given structure of MESSAGES table:

```
MESSAGES (msg1 varchar(100), msg2 varchar(100))
```

MESSAGES table contains below records:

```
'Happy New Year!', 'Happy Holidays!'
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select msg1 as msg, msg2 as msg FROM
        MESSAGES";
        try (Connection con = DriverManager.getConnection(url,
        user, password);
             Statement stmt =
        con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
        ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);)
        {
            rs.absolute(1);
            System.out.println(rs.getString("msg"));
            System.out.println(rs.getString("msg"));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A -

```
Happy New Year!
Happy New Year!
```

B - An exception is thrown at runtime

C -

```
Happy New Year!
```

Happy Holidays!

D -

Happy Holidays!
Happy Holidays!

Building Database Applications with JDBC - 2

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
         ResultSet.CONCUR_READ_ONLY);
        ) {
            ResultSet rs = stmt.executeQuery(query);
            rs.relative(-3);
            rs.relative(1);
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 103

B - 104

C - 102

D - 101

E - An exception is thrown at runtime.

Building Database Applications with JDBC - 3

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE WHERE SALARY > 14900 ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
         ResultSet.CONCUR_UPDATABLE);
             ResultSet rs = stmt.executeQuery(query);) {
           rs.absolute(2);
           rs.updateDouble("SALARY", 20000);
        } catch (SQLException ex) {
            System.out.println("Error");
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - Program executes successfully and salary of Regina Williams is updated to 20000

B - 'Error' is printed on to the console

C - Program executes successfully but no record is updated in the database

D - Program executes successfully and salary of Sean Smith is updated to 20000

Building Database Applications with JDBC - 4

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

Given code of Test.java file:

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;

public class Test {
    public static void main(String[] args) throws SQLException {
        Connection connection = null;
        try (Connection con =
         DriverManager.getConnection("jdbc:mysql://localhost:3306/ocp",
          "root", "password");)
        {
            connection = con;
        }
        Statement stmt = connection.createStatement();
        stmt.executeUpdate("INSERT INTO EMPLOYEE VALUES(101, 'John',
         'Smith', 12000)");
        stmt.close();
        connection.close();
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath. EMPLOYEE table doesn't have any records.

What will be the result of compiling and executing Test class?

A - An exception is thrown at runtime

B - Compilation error

C - The program executes successfully but no record is inserted in the EMPLOYEE table

D - The program executes successfully and one record is inserted in the EMPLOYEE table

Building Database Applications with JDBC - 5

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) {
        try {
            Connection con =
        DriverManager.getConnection("jdbc:mysql://localhost:3306/ocp",
         "root", "password");
            String query = "Select * FROM EMPLOYEE";
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery(query);
            while (rs.next()) { //Line 12
                System.out.println("ID: " + rs.getInt("ID"));
                System.out.println("First Name: " +
        rs.getString("FIRSTNAME"));
                System.out.println("Last Name: " +
        rs.getString("LASTNAME"));
                System.out.println("Salary: " +
        rs.getDouble("SALARY"));
            }
            rs.close(); //Line 18
            stmt.close();
            con.close();
        } catch (SQLException ex) {
            ex.printStackTrace();
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath. EMPLOYEE table doesn't have any records.

What will be the result of compiling and executing Test class?

A - Line 18 throws an exception at runtime

B - Line 12 throws an exception at runtime

C - Code executes fine and prints following on to the console:

```
ID: 0
```

```
First Name: null
Last Name: null
Salary: 0.0
```

D - Code executes fine and doesn’t print anything on to the console

Building Database Applications with JDBC - 6

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, MESSAGE FROM LOG";
        try (Connection con = DriverManager.getConnection(url,
        user, password);
            Statement stmt =
        con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
        ResultSet.CONCUR_UPDATABLE);
        ) {
            stmt.executeUpdate("INSERT INTO LOG VALUES(1001, 'Login
        Successful')");
            stmt.executeUpdate("INSERT INTO LOG VALUES(1002, 'Login
        Failure')");

            con.setAutoCommit(false);

            stmt.executeUpdate("INSERT INTO LOG VALUES(1003, 'Not
        Authorized')");
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath. LOG table doesn't have any records.

What will be the result of compiling and executing Test class?

A - No records will be inserted in the database table

B - Records for IDs 1001 and 1002 will be successfully inserted in the database table

C - Records for ID 1003 will be successfully inserted in the database table

D - Records for IDs 1001, 1002 and 1003 will be successfully inserted in the database table

Building Database Applications with JDBC - 7

Which of the 4 interfaces must be implemented by a JDBC driver?

A - java.sql.Statement

B - java.sql.Date

C - java.sql.Connection

D - java.sql.Driver

E - java.sql.ResultSet

F - java.sql.DriverManager

Building Database Applications with JDBC - 8

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```java
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select * from EMPLOYEE";
        Connection con = DriverManager.getConnection(url, user,
         password);
        try (Statement stmt = con.createStatement())
        {
            ResultSet rs = stmt.executeQuery(query);
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

Which of the following objects will get closed? Select ALL that apply.

A - ResultSet object

B - None of the objects will get closed as close() method is not invoked.

C - Connection object

D - Statement object

Building Database Applications with JDBC - 9

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
         ResultSet.CONCUR_UPDATABLE);
        ) {
            ResultSet rs = stmt.executeQuery(query);
            rs.afterLast();
            while (rs.previous()) {
                rs.updateDouble(4, rs.getDouble(4) + 1000);
            }
            rs.updateRow();

            rs = stmt.executeQuery(query);
            while(rs.next()) {
                System.out.println(rs.getDouble(4));
            }
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A -

```
12000.0
15000.0
15500.0
14600.0
```

B -

```
13000.0
15000.0
15500.0
14600.0
```

C - An exception is thrown at runtime

D -

```
12000.0
15000.0
15500.0
15600.0
```

E -

```
13000.0
16000.0
16500.0
15600.0
```

Building Database Applications with JDBC - 10

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;
import java.util.Properties;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        Properties prop = new Properties();
        prop.put("username", "root");
        prop.put("password", "password");
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         prop);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
         ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);) {
            rs.relative(1);
            System.out.println(rs.getString(2));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - John

B - Sean

C - Smith

D - An exception is thrown at runtime.

Building Database Applications with JDBC - 11

Consider ‘con’ refers to a valid Connection instance. Which of the following successfully creates Statement instance? Select All that apply.

A - con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE);

B - con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE, ResultSet .CONCUR_READ_ONLY);

C - con.createStatement(ResultSet.CONCUR_READ_ONLY);

D - con.createStatement();

Building Database Applications with JDBC - 12

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John    Smith   12000
102 Sean    Smith   15000
103 Regina  Williams    15500
104 Natasha George  14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
         ResultSet.CONCUR_UPDATABLE);
        ) {
            ResultSet rs = stmt.executeQuery(query);

            rs.absolute(3);
            rs.updateString(3, "Gales");
            rs.updateRow();
            rs.refreshRow();
            System.out.println(rs.getString(2) + " " +
         rs.getString(3));
        }
    }
}
```

Also assume:

URL is correct and db credentials are: root/password.

SQL query is correct and valid.

The JDBC 4.2 driver jar is configured in the classpath.

Updates on EMPLOYEE table are being done by Test.java code only.

What will be the result of compiling and executing Test class?

A - Regina Williams

B - Natasha George

C - John Smith

D - Regina Gales

Building Database Applications with JDBC - 13

Given structure of MESSAGES table:

```
MESSAGES (msg1 varchar(100), msg2 varchar(100))
```

MESSAGES table contains below records:

```
'Happy New Year!', 'Happy Holidays!'
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "DELETE FROM MESSAGES";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt = con.createStatement();
             ResultSet rs = stmt.executeQuery(query);)
        {
            rs.next();
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 0

B - 1

C - An exception is thrown at runtime

D - Compilation error

Building Database Applications with JDBC - 14

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String query = "Select * FROM EMPLOYEE";
        try (Connection con =
        DriverManager.getConnection("jdbc:mysql://localhost:3306/ocp",
         "root", "password");
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery(query);) {
            System.out.println(rs.getMetaData().getColumnCount());
        //Line 11
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath. EMPLOYEE table doesn't have any records.

What will be the result of compiling and executing Test class?

A - Code executes successfully and prints 4 on to the console

B - SQLException is thrown at Line 11

C - Compilation error

D - NullPointerException is thrown at Line 11

Building Database Applications with JDBC - 15

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;
import java.util.Properties;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        Properties prop = new Properties();
        prop.put("user", "root");
        prop.put("password", "password");
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         prop);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
         ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);) {
            rs.relative(1);
            System.out.println(rs.getString(2));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - An exception is thrown at runtime

B - Sean

C - Smith

D - John

Building Database Applications with JDBC - 16

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
         ResultSet.CONCUR_UPDATABLE);
        ) {
            ResultSet rs = stmt.executeQuery(query);
            rs.afterLast();
            while (rs.previous()) {
                rs.updateDouble(4, rs.getDouble(4) + 1000);
                rs.updateRow();
            }

            rs = stmt.executeQuery(query);
            while(rs.next()) {
                System.out.println(rs.getDouble(4));
            }
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A -

15600.0
16500.0
16000.0
13000.0

B -

13000.0
15000.0
15500.0
14600.0

C -

13000.0
16000.0
16500.0
15600.0

D -

12000.0
15000.0
15500.0
15600.0

E -

12000.0
15000.0
15500.0
14600.0

Building Database Applications with JDBC - 17

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;
import java.util.Properties;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        Properties prop = new Properties();
        prop.put("user", "root");
        prop.put("password", "password");
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        try (Connection con = DriverManager.getConnection(url,
         prop);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
         ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);)
        {
            rs.afterLast();
            rs.relative(-1);
            rs.previous();
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 103

B - 102

C - 104

D - 101

Building Database Applications with JDBC - 18

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        try (Connection con = DriverManager.getConnection(url,
        user, password);
             Statement stmt =
        con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
        ResultSet.CONCUR_READ_ONLY);
        ) {
            ResultSet res1 = stmt.executeQuery("SELECT * FROM
        EMPLOYEE ORDER BY ID");
            ResultSet res2 = stmt.executeQuery("SELECT * FROM
        EMPLOYEE ORDER BY ID DESC");
            res1.next();
            System.out.println(res1.getInt(1));
            res2.next();
            System.out.println(res2.getInt(1));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - None of the other options

B -

```
101
104
```

C -

```
104
101
```

D - An exception is thrown at runtime

Building Database Applications with JDBC - 19

Database URL starts with _____.

A - db:

B - database:

C - jdbc:

D - url:

Building Database Applications with JDBC - 20

Which of the following is a valid ResultSet type?

A - TYPE_SCROLL

B - TYPE_BACKWARD_ONLY

C - TYPE_FORWARD_ONLY

D - TYPE_BOTH

Building Database Applications with JDBC - 21

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John    Smith   12000
102 Sean    Smith   15000
103 Regina  Williams    15500
104 Natasha George  14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_FORWARD_ONLY,
         ResultSet.CONCUR_UPDATABLE);
        ) {
            ResultSet rs = stmt.executeQuery(query);
            rs.moveToInsertRow();
            rs.updateInt(1, 105);
            rs.updateString(2, "Chris");
            rs.updateString(3, "Lee");
            rs.updateDouble(4, 16000);
            rs.refreshRow(); //Line n1
            rs.insertRow(); //Line n2
            rs.last();
            System.out.println(rs.getInt(1)); //Line n3
        }
    }
}
```

Also assume:

URL is correct and db credentials are: root/password.

SQL query is correct and valid.

The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 105

B - An exception is raised by Line n3

C - 104

D - An exception is raised by Line n1

E - An exception is raised by Line n2

Building Database Applications with JDBC - 22

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below record:

```
101, John, Smith, 12000
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) {
        try {
            Connection con =
        DriverManager.getConnection("jdbc:mysql://localhost:3306/ocp",


        "root", "password");
            String query = "Select * FROM EMPLOYEE";
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery(query);
            while (rs.next()) {
                System.out.println("ID: " + rs.getInt("IDD"));
                System.out.println("First Name: " +
        rs.getString("FIRSTNAME"));
                System.out.println("Last Name: " +
        rs.getString("LASTNAME"));
                System.out.println("Salary: " +
        rs.getDouble("SALARY"));
            }
            rs.close();
            stmt.close();
            con.close();
        } catch (SQLException ex) {
            System.out.println("An Error Occurred!");
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - Code executes fine and prints following on to the console:

```
ID: 101
```

```
First Name: John
Last Name: Smith
Salary: 12000
```

B - Code executes fine and doesn't print anything on to the console.

C - Compilation Error

D - Code executes fine and prints following on to the console:

```
ID: 0
First Name: John
Last Name: Smith
Salary: 12000
```

E - 'An Error Occurred!' is printed on to the console

Building Database Applications with JDBC - 23

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
         ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);) {
            rs.absolute(-2);
            rs.relative(-1);
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 101

B - 103

C - 104

D - 102

Building Database Applications with JDBC - 24

Given structure of MESSAGES table:

```
MESSAGES (msg1 varchar(100), msg2 varchar(100))
```

MESSAGES table contains below records:

```
'Happy New Year!', 'Happy Holidays!'
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select msg1 as msg, msg2 as msg FROM
        MESSAGES";
        try (Connection con = DriverManager.getConnection(url,
        user, password);
             Statement stmt =
        con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
        ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);)
        {
            int colCount = rs.getMetaData().getColumnCount();
            for(int i = 1; i <= colCount; i++) {
                System.out.println(rs.getString(i));
            }
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A -

```
Happy New Year!
Happy Holidays!
```

B -

```
Happy New Year!
Happy New Year!
```

C -

```
Happy Holidays!
Happy Holidays!
```

D - An exception is thrown at runtime

Building Database Applications with JDBC - 25

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt = con.createStatement();
             ResultSet rs = stmt.executeQuery(query);) {
            rs.absolute(3);
            rs.relative(-1);
            rs.deleteRow();
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - An exception is thrown at runtime

B - Record corresponding to ID 101 is deleted successfully

C - Record corresponding to ID 103 is deleted successfully

D - Record corresponding to ID 102 is deleted successfully

E - Record corresponding to ID 104 is deleted successfully

Building Database Applications with JDBC - 26

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) {
        try {
            Connection con =
        DriverManager.getConnection("jdbc:mysql://localhost:3306/ocp",
         "root", "password");
            String query = "Select * FROM EMPLOYEE";
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery(query);
            while (rs.next()) {
                System.out.println("ID: " + rs.getInt("IDD"));
                System.out.println("First Name: " +
        rs.getString("FIRSTNAME"));
                System.out.println("Last Name: " +
        rs.getString("LASTNAME"));
                System.out.println("Salary: " +
        rs.getDouble("SALARY"));
            }
            rs.close();
            stmt.close();
            con.close();
        } catch (SQLException ex) {
            System.out.println("An Error Occurred!");
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath. EMPLOYEE table doesn't have any records.

What will be the result of compiling and executing Test class?

A - Code executes fine and doesn't print anything on to the console

B - Compilation Error

C - 'An Error Occurred!' is printed on to the console

D - NullPointerException is thrown at runtime

Building Database Applications with JDBC - 27

Which of the following is a valid ResultSet concur type?

A - CONCUR_BOTH

B - CONCUR_WRITE_ONLY

C - CONCUR_READ_WRITE

D - CONCUR_READ_ONLY

Building Database Applications with JDBC - 28

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John    Smith   12000
102 Sean    Smith   15000
103 Regina  Williams    15500
104 Natasha George  14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_FORWARD_ONLY,
         ResultSet.CONCUR_UPDATABLE);
        ) {
            ResultSet rs = stmt.executeQuery(query);
            rs.absolute(1);
            rs.moveToInsertRow();
            rs.updateInt(1, 105);
            rs.updateString(2, "Chris");
            rs.updateString(3, "Morris");
            rs.updateDouble(4, 25000);
            rs.deleteRow();
            rs.refreshRow();
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume:

URL is correct and db credentials are: root/password.

SQL query is correct and valid.

The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 104

B - 105

C - An exception is raised by rs.deleteRow();

D - 102

E - An exception is raised by rs.refreshRow();

Building Database Applications with JDBC - 29

Given structure of MESSAGES table:

```
MESSAGES (msg1 varchar(100), msg2 varchar(100))
```

MESSAGES table contains below records:

```
'Happy New Year!', 'Happy Holidays!'
```

Given code of Test.java file:

```
import java.sql.*;
import java.util.Properties;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        Properties prop = new Properties();
        prop.put("user", "root");
        prop.put("password", "password");
        String query = "Select count(*) FROM MESSAGES";
        try (Connection con = DriverManager.getConnection(url,
        prop);
             Statement stmt =
        con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
        ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);)
        {
            rs.absolute(0);
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - 0

B - 1

C - 2

D - An exception is thrown at runtime

Building Database Applications with JDBC - 30

Given structure of LOG table:

```
LOG (ID integer, MESSAGE varchar(1000), PRIMARY KEY (ID))
```

Given code of Test.java file:

```
import java.sql.*;
import java.util.Properties;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        Properties prop = new Properties();
        prop.put("user", "root");
        prop.put("password", "password");
        String query = "Select count(*) FROM LOG";
        try (Connection con = DriverManager.getConnection(url,
         prop);
             Statement stmt = con.createStatement();
             ResultSet rs = stmt.executeQuery(query);)
        {
            System.out.println(rs.getInt(1));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath. LOG table doesn't have any records.

What will be the result of compiling and executing Test class?

A - 0

B - 1

C - An exception is thrown at runtime

Building Database Applications with JDBC - 31

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;
import java.util.Properties;

public class Test {
    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://localhost:3306/ocp";
        Properties prop = new Properties();
        prop.put("user", "root");
        prop.put("password", "password");
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";
        Class.forName(url);

        try (Connection con = DriverManager.getConnection(url,
         prop);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
         ResultSet.CONCUR_READ_ONLY);
             ResultSet rs = stmt.executeQuery(query);) {
            rs.relative(1);
            System.out.println(rs.getString(2));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - Sean

B - John

C - An exception is thrown at runtime

D - Smith

Building Database Applications with JDBC - 32

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE WHERE SALARY > 14900 ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt =
         con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
         ResultSet.CONCUR_UPDATABLE);
             ResultSet rs = stmt.executeQuery(query);) {
           rs.absolute(-1);
           rs.updateDouble("SALARY", 20000);
           rs.updateRow();
        } catch (SQLException ex) {
            System.out.println("Error");
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - Program executes successfully and salary of Sean Smith is updated to 20000

B - Program executes successfully and salary of Regina Williams is updated to 20000

C - Program executes successfully but no record is updated in the database

D - ‘Error’ is printed on to the console

Building Database Applications with JDBC - 33

Consider below statement:

Any _____ drivers that are found in your class path are automatically loaded.

Which of the following options correctly fills the blank space?

A - JDBC 1 and later

B - JDBC 2 and later

C - JDBC 3 and later

D - JDBC 4 and later

Building Database Applications with JDBC - 34

Given structure of MESSAGES table:

```
MESSAGES (msg1 varchar(100), msg2 varchar(100))
```

MESSAGES table contains below records:

```
'Happy New Year!', 'Happy Holidays!'
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "DELETE FROM MESSAGES";
        try (Connection con = new Connection(url, user, password);
             Statement stmt = con.createStatement())
        {
            System.out.println(stmt.executeUpdate(query));
        }
    }
}
```

Also assume: URL is correct and db credentials are: root/password. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - Compilation error

B - 0

C - An exception is thrown at runtime

D - 1

Building Database Applications with JDBC - 35

Given structure of EMPLOYEE table:

```
EMPLOYEE (ID integer, FIRSTNAME varchar(100), LASTNAME varchar(100),
SALARY real, PRIMARY KEY (ID))
```

EMPLOYEE table contains below records:

```
101 John Smith 12000
102 Sean Smith 15000
103 Regina Williams 15500
104 Natasha George 14600
```

Given code of Test.java file:

```
import java.sql.*;

public class Test {
    public static void main(String[] args) throws SQLException {
        String url = "jdbc:mysql://localhost:3306/ocp";
        String user = "root";
        String password = "password";
        String query = "Select ID, FIRSTNAME, LASTNAME, SALARY FROM
         EMPLOYEE ORDER BY ID";

        try (Connection con = DriverManager.getConnection(url,
         user, password);
             Statement stmt = con.createStatement();
             ResultSet rs = stmt.executeQuery(query);) {
            rs.moveToInsertRow();
            rs.updateInt(1, 105);
            rs.updateString(2, "Smita");
            rs.updateString(3, "Jain");
            rs.updateDouble(4, 16000);
            rs.insertRow();
        }
    }
}
```

Also assume: URL, username and password are correct. SQL query is correct and valid. The JDBC 4.2 driver jar is configured in the classpath.

What will be the result of compiling and executing Test class?

A - Program executes successfully but no new record is inserted in the database

B - Program executes successfully and a new record is inserted in the database

C - An exception is thrown at runtime

Building Database Applications with JDBC - 36

By default a Connection object is in auto-commit mode.

A - false

B - true