



PROGRAMMING IN JAVA

Assignment 12

TYPE OF QUESTION: MCQ

Number of questions: 10

Total marks: $10 \times 1 = 10$

QUESTION 1:

Execution of the following SQL command

```
SELECT * FROM myTable
```

using JDBC program will return a `ResultSet` object. This object is:

- a. Same as the `myTable`.
- b. All records in verbatim from the table.
- c. All records in verbatim from the table but those records with null values.
- d. All records in verbatim from the table but those records are not with null values.

Correct Answer:

- b. All records in verbatim from the table.

Detailed Solution:

When executing an SQL `SELECT` query using JDBC, the result is returned as a `ResultSet` object. This `ResultSet` object contains all the records (rows) returned by the `SELECT` query from the specified table (`myTable` in this case), without any filtering based on null values. Therefore, option b is correct.



QUESTION 2:

Which of the following method is used to set a frame, *f* with size 300 × 200 pixels?

```
JFrame f = newJFrame();
```

- a. `f.setSize(300, 200);`
- b. `f.setSize(200, 300);`
- c. `f.paint(300, 200);`
- d. `f.setVisible(300, 200);`

Correct Answer:

- a. `f.setSize(300, 200);`

Detailed Solution:

The method `setSize(int width, int height)` is used to set the size of a `JFrame` (or any component) in Java Swing. Therefore, option a is the correct answer to set a `JFrame` named *f* with size 300 × 200 pixels.



QUESTION 3:

Consider the following program:

```
public class Question {  
    public static void main(String[] args) {  
  
        String str = "NPTEL - Programming in JAVA - JULY 2024";  
  
        System.out.println(str.length());  
    }  
}
```

- a. 38
- b. 39
- c. 40
- d. 41

Correct Answer:

- b. 39

Detailed Solution:

The provided Java program calculates and prints the length of the string `str`, which contains the text "NPTEL - Programming in JAVA - JULY 2024".

The output of this program will be: 39

This is because the string "NPTEL - Programming in JAVA - JULY 2024" consists of 39 characters, including spaces and hyphens.



QUESTION 4:

What is the output of the following program?

```
public class Test {  
    public static void aMethod() throws Exception {  
        try {  
            throw new Exception();  
        } finally {  
            System.out.print("finally ");  
        }  
    }  
  
    public static void main(String args[]) {  
        try {  
            aMethod();  
        } catch (Exception e) {  
            System.out.print("exception ");  
        }  
        System.out.print("finished ");  
    }  
}
```

- a. finally
- b. exception finished
- c. finally exception finished
- d. Compilation fails

Correct Answer:

- c. finally exception finished



Detailed Solution:

The program is syntactically correct and here for two try blocks, there is one catch block.
Here's the step-by-step explanation:

- i. The `main` method calls `aMethod()`, which throws an `Exception`.
 - ii. Inside `aMethod()`, an `Exception` is thrown in the `try` block.
 - iii. The `finally` block is always executed, regardless of whether an exception is thrown or not. In this case, it prints "finally".
 - iv. Since `aMethod()` throws an `Exception`, control moves to the `catch` block in `main`.
 - v. The `catch` block prints "exception".
 - vi. After the `try-catch` block in `main`, "finished" is printed.
 - vii. Therefore, the complete output is "finally exception finished".
-

QUESTION 5:

What is the output of the following program?

```
class Program {  
    public static void main(String[] args) {  
        int counter = 10;  
        do {  
            System.out.print(2 / counter);  
            counter--;  
        } while (counter > 2);  
    }  
}
```

- a. 00000012
- b. 00000000
- c. 10011001
- d. 12211221

Correct Answer:

- b. 00000000**

Detailed Solution:

The provided program uses a do-while loop to iterate from counter = 10 down to counter = 3. During each iteration, it prints the result of $2 / \text{counter}$.

1. counter = 10: $2 / 10$ results in 0 (integer division).
2. counter = 9: $2 / 9$ results in 0.
3. counter = 8: $2 / 8$ results in 0.
4. counter = 7: $2 / 7$ results in 0.
5. counter = 6: $2 / 6$ results in 0.
6. counter = 5: $2 / 5$ results in 0.
7. counter = 4: $2 / 4$ results in 0.

When counter = 3: $2 / 3$ results in 0.

After counter becomes 2, the loop condition $\text{counter} > 2$ fails, and the loop terminates.

Therefore, the output of the program is 00000000.

QUESTION 6:

What should be the value of X and Y for the output of the below program to be 36?

```
public class Question {  
    public static void main(String[] args) {  
        int X = 4;  
        int Y = 5;  
        int sum = 0;  
        for (int i = 0; i < X; i++) {  
            for (int j = i; j < Y; j++) {  
                sum = sum + j;  
            }  
        }  
        System.out.print(sum);  
    }  
}
```

- a. X = 6 and Y = 5
- b. X = 2 and Y = 7
- c. X = 1 and Y = 10
- d. X = 4 and Y = 5

Correct Answer:

- d. X = 4 and Y = 5

Detailed Solution:

The following is the output of the program for different values of X and Y:

- a. when X = 6 and Y = 5 output is 40
- b. when X = 2 and Y = 7 output is 42
- c. when X = 1 and Y = 10 output is 45
- d. when X = 4 and Y = 5 output is 36

QUESTION 7:

Which of the following options correctly initializes the elements of the numbers array with values 1, 2, 3, 4, and 5?

```
public class NPTEL {  
    public static void main(String[] args) {  
        int[] numbers = new int[5];  
        // #1 : Missing code block  
        System.out.println("First element: " + numbers[0]);  
    }  
}
```

- a. numbers = {1, 2, 3, 4, 5};
- b. for (int i = 1; i < numbers.length; i++) {
 numbers[i] = i;
}
- c. numbers[] = {1, 2, 3, 4, 5};
- d. numbers = new int[]{1, 2, 3, 4, 5};

Correct Answer:

- a. numbers = new int[]{1, 2, 3, 4, 5};

Detailed Solution:

numbers = new int[]{1, 2, 3, 4, 5}; is the correct answer because it initializes the numbers array with values 1, 2, 3, 4, and 5 using array initializer syntax.



QUESTION 8:

Which of the following statements are correct and would NOT cause a compilation error?

- i. `float[] = new float(3);`
- ii. `float f1[] = new float[];`
- iii. `float[] f2 = new float[3];`
- iv. `float f3[] = new float[3];`
- v. `float f4[] = { 1.0f, 2.0f, 2.0f };`
- vi. `float f5[] = new float[] { 1.0f, 2.0f, 3.0f};`

- a. iii, iv, v, vi
- b. i, ii, iii, iv
- c. ii, iii, v, vi
- d. i, ii, iv, vi

Correct Answer:

- a. iii, iv, v, vi

Detailed Solution:

Option iii, iv, v and vi are syntactically correct for declaration of an array.



QUESTION 9:

What will be the output of this program?

```
public class NPTEL {  
    public static void main(String[] args) {  
        String str1 = "Hello";  
        String str2 = "Hello";  
        String str3 = new String("Hello");  
        System.out.print((str1 == str2) + " ");  
        System.out.print(str1 == str3);  
    }  
}
```

- a. true false
- b. false true
- c. true true
- d. false false

Correct Answer:

- a. true false

Detailed Solution:

`str1` and `str2` are string literals and will be interned to the same memory location, so `str1 == str2` will be true. However, `str3` is created using the `new` keyword, so it will be stored in a different memory location, leading `str1 == str3` to be false.

QUESTION 10:

What will be the output of this program?

```
public class NPTEL {  
    public static void main(String[] args) {  
        try {  
            int num = 10 / 0;  
            System.out.println(num);  
        } catch (ArithmeticException e) {  
            System.out.println("Arithmetic exception occurred");  
        } finally {  
            System.out.println("Finally block executed");  
        }  
    }  
}
```

- a. Compilation ERROR
- b. "Finally block executed"
- c. "Arithmetic exception occurred
Finally block executed"
- d. Runtime ERROR

Correct Answer:

- c. "Arithmetic exception occurred
Finally block executed"

Detailed Solution:

The division by zero will throw an `ArithmeticException`, which will be caught in the `catch` block. Then, the `finally` block will be executed.