

java

اختبار ميد

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Question 1: True/False & Multiple Choice

1. In Java, all source code is first written in plain text files ending with the .class extension.

Answer: False - Source code files end with .java extension, not .class.

2. In Java, the compiler will ignore a Java line that begins with two forward slashes.

Answer: True - // indicates a single-line comment which is ignored by the compiler.

3. In Java, the logical OR operator returns false if both of its operands are true.

Answer: False - Logical OR (||) returns true if at least one operand is true.

4. The below piece of Java code will not print anything.

java

```
if (x > 10) { System.out.println("x is greater than 10"); }
```

Answer: True - If x is not defined or is less than or equal to 10, nothing will be printed.

5. In problem solving approach, _____ is the first step in the process.

- a. compile the code
- b. implement the algorithm
- c. design the algorithm
- d. analyze the problem

Answer: d. analyze the problem

6. Which of the following variable declarations are correct?

- a. `n = 12;`
- b. `int one = 5; two;`
- c. `double x, y, z;`
- d. `char letter = ;`

Answer: c. `double x, y, z;` - This is the only correct declaration.

7. Assume `x=8, y=5` and `z=(-x * 3 % y)` then `z` is:

Answer: -4

Calculation: $-x = -8$, $-8 * 3 = -24$, $-24 \% 5 = -4$

8. Which of the following keywords is used to exit a switch case?

- a. `void`
- b. `static`
- c. `break`
- d. `case`

Answer: c. `break`

Question 2: Detailed Solutions

2.1 Convert the if statement below to a conditional "ternary" operator statement.

```
java
if (average < 60) {
    System.out.println("Grade B"); }
else {
    System.out.println("Grade A"); }
```

Answer:

```
java
System.out.println(average < 60 ? "Grade B" : "Grade A");
```

2.2 Assume that $x = 3$, $y = 2$, and $z = 8$. What is the result of the following Java expression?

```
(x + y) * z / y
```

Answer: 20

Calculation: $(3 + 2) = 5$, $5 \times 8 = 40$, $40 \div 2 = 20$

Code Correction & Flowchart

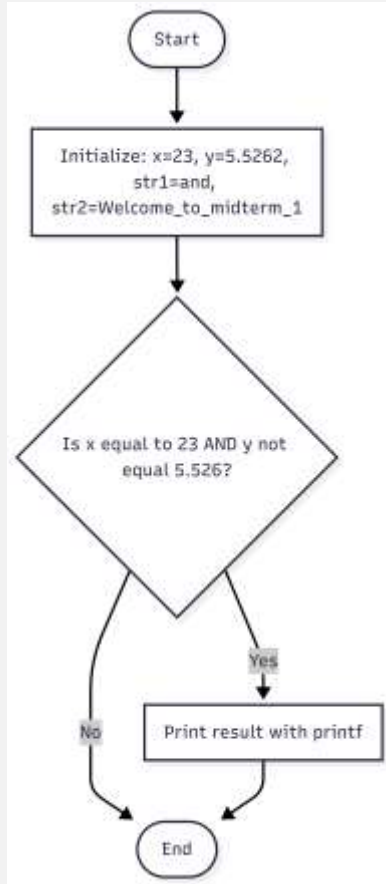
Trace the Java code shown below:

```
java
public class Main {
    Public static void main(String[] args) {
        int x = 23;
        int y = 5.5262;
        String str1 = "and"; str2 = "Welcome to midterm_1";
        if (x == 23 && y != 5.526)
            System.out.printf("The result is %d %.3s %.2f %.7s , x ,
str1., y , str2);
    }
}
```

}

a. Find the error, and finally correct it:

- Line 2: `Public` → `public` (Java is case-sensitive)
- Line 4: `int y = 5.5262;` → `double y = 5.5262;` (cannot assign double to int)
- Line 5: `String str1 = "and"; str2 = "Welcome to midterm_1";` → `String str1 = "and", str2 = "Welcome to midterm_1";`
- Line 7: Fix `printf` syntax → `System.out.printf("The result is %d %.3s %.2f %.7s", x, str1, y, str2);`

b. Draw the flowchart that satisfies the corrected code:**c. Determine and write the output of the code after correction:**

The result is 23 and 5.53 Welcome