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Name of the Bundle	Advanced Bundle V1	Subject	Java Programming V1
Topic	Decision Making	Last updated on	10 August 2024

1. **Which of the following statements correctly represents the syntax of an if statement in Java?**

    a. if (condition) {/* statements */}

    b. if (condition) then {/* statements */}

    c. if condition {/* statements */}

    d. if (condition) => {/* statements */}

Ans: a. if (condition) {/* statements */}

Explanation: The only correct syntax is if (condition) { /* statements */ }. This is how Java understands and executes conditional logic declared within another if statement.

2. **What is the purpose of control flow statements?**

    a. To ensure sequential execution.

    b. To ensure execution from bottom to top

    c. To break up the flow of execution.

    d. ensure execution from top to bottom

Ans: c. To break up the flow of execution.

Explanation: Control flow statements manage the order of code execution by making decisions, looping, or skipping parts of the code. They effectively break up the default sequential flow of execution.

3. Which of the following is NOT one of the three types of control flow statements?

   a. Decision-making statements

   b. Branching statements

   c. Looping statements

   d. Sequential statements

Ans: d. Sequential statements

Explanation: Sequential statements are not a separate type but refer to the default order of execution from top to bottom. The main control flow statement types are decision-making, branching, and looping statements.

4. If you need to evaluate more than one condition, which decision-making statement is the best?

   a. If

   b. if/else if/elif

   c. While

   d. if/else

Ans: b. if/else if/elif

Explanation: The if/else if/else statement is ideal for evaluating multiple conditions sequentially. It allows you to test several conditions in a structured way, executing different blocks of code based on which condition is true.

5. Which of these selection statements test only for equality?

   a. if

   b. switch

   c. if & switch

   d. none of the mentioned

Ans: b. switch

Explanation: Switch statements check for equality between the controlling variable and its constant cases.

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6. Which of these are selection statements in Java?

   a. if ()

   b. for ()

   c. continue

   d. break

Ans: a. if ()

Explanation: Continue and break are jump statements, and for is a looping statement.

7. State True/False. The condition is tested using a "if statement".

   a. true

   b. false

Ans: a. true

Explanation: The `if` statement is used to test a condition and execute a block of code if the condition evaluates to true.

8. What is the correct output of this program?

```java
public class ControlStatement1 {
  public static void main (String [] args) {
        if(true){
                System.out.println("If condition true");
  }}}
```

   a. Compile time Error

   b. Run time Error

   c. If condition true

   d. All of the above

Ans: c. If condition true

Explanation: The code will always print "If condition true" because the condition in the `if` statement is always `true`. Thus, the code inside the `if` block executes unconditionally.

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9. What is the correct output of this program ?

public class ControlStatement {

 public static void main(String[] args) {

    int a = 5;

    int b = 10;

    if(a>b){

       System.out.println("A greater than B");

    }else{

       System.out.println("A less than B");

    } }

 }

- a. A greater than B
- b. A less than B
- c. Both of above
- d. A Equal to B

Ans: b. A less than B

Explanation: The program compares the values of a (5) and b (10). Since a is less than b, the else block executes, printing "A less than B".

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10.   What is the correct output of this program ?

```java
public class ControlStatement {

    public static void main(String[] args) {

        int a = 5;

        int b = 10;

        if(a>b || a<b){

            System.out.println("A greater than B OR A less than B");

        }else{

            System.out.println("Invalid Condition");

        }}}
```

a. A greater than B
b. A less than B
c. A greater than B OR A less than B
d. Invalid Condition

Ans: c. A greater than B OR A less than B

Explanation: The condition a > b || a < b is always true, as a must be either greater or less than b. Therefore, the program prints "A greater than B OR A less than B".

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11.   What is the primary purpose of the "if=else" statement in programming?
   a. To declare variables
   b. To perform arithmetic operations
   c. To make decisions and execute different code based on conditions
   d. To create loops

Ans: c. To make decisions and execute different code based on conditions

Explanation: The primary purpose of the "if-else" statement in programming is to make decisions based on conditions. It allows different code blocks to execute depending on whether a specified condition is true or false.

12.   In a nested "if-else" statement, what happens if the condition in the outer "if" block is false?
   a. The program terminates.
   b. The code inside the inner "if" block is executed.
   c. The code inside the inner "else" block is executed.
   d. None of the above

Ans: b. The code inside the inner "if" block is executed

Explanation: If the condition in the outer "if" block is false, the program checks the next condition in the "else" block. If there is a nested "if" inside this "else," its condition is then evaluated and executed if true.

13.   What is the purpose of using "elseif" in an "if else" statement?
   a. To specify an alternative condition to check if the previous condition is false.
   b. To indicate that the code should skip the current condition.
   c. To create a loop
   d. To declare a new variable.

Ans: a. To specify an alternative condition to check if the previous condition is false.

Explanation: The "elseif" in an "if else" statement provides an alternative condition to check if the previous condition is false. It allows multiple conditions to be evaluated in sequence.

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14. What will be the output of the following snippet?

    int x=7;

    if(x==2);

    System.out.println("Number seven");

    System.out.println("Not seven");

    a. NumberSeven NotSeven
    b. NumberSeven
    c. NotSeven
    d. Error
    e. 7

Ans: a. NumberSeven NotSeven

Explanation: The semicolon after if(x==2); ends the if statement prematurely, so both System.out.println statements execute independently, resulting in the output "Number seven Not seven."

15. What will be the output of the following?
    int x=10, y=0;
    if(x&& y){
    System.out.println("TRUE");
    else
    System.out.println("FALSE");

    a. false
    b. true
    c. Compilation Error
    d. Runtime Error

Ans: c. Compilation Error

Explanation: The code has a compilation error because if(x && y) uses && with integers instead of booleans, and the else block lacks a closing brace for the if block.

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16.   What is the output of the Java program?

    int a=10;

    if(a==9){

      System.out.println("OK ");

      System.out.println("MASTER");   }

    else

      System.out.println("BYE");

    a. OK MASTER

    b. BYE

    c. Compiler error

    d. None

Ans: b. BYE

Explanation: The program has a compiler error because the else is not aligned with the if block, which lacks braces and includes two statements.

17.   What is the output of the Java program?

  String name1="FOX", name2="DOG";

 if(name1 == "FOX")

  System.out.print("FOX ");

  System.out.println("GOOD");

 if(name2 == "CAT")

  System.out.println("DINO");

        a. FOXDINO
        b. FOX GOOD
        c. Compiler error
        d. None

Ans: b. FOX GOOD

Explanation: The output is "FOX GOOD" because the first condition is true, printing "FOX " and ".

18.   **An ELSE statement must be preceded by ＿＿ statement in Java**

a. IF

b. ELSE IF

c. IF or ELSE IF

d. None

Ans: c.IF or ELSE IF

Explanation: An else statement must be preceded by an if or else if statement in Java. The else provides an alternative to the preceding if or else if conditionsGOOD"; the second condition is false, so "DINO" is not printed.

19.   **What is the output of the below program?**

```
int a = 25;
if(a > 5)
    System.out.print("Hi ");
if(a < 20)
    System.out.print("Hello ");
else
    System.out.print("Know Program ");
```

a. Hi

b. Hello

c. Know Program

d. Hi Know Program

Ans: d. Hi Know Program

Explanation: The output is "Hi Know Program" because the first condition is true, printing "Hi ", and the second is false, triggering the else block to print "Know Program".

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20.   Which of the following control structures is used to execute a block of code repeatedly while a condition is true?

    a. If

    b. For

    c. While

    d. switch

Ans: c. While

Explanation: The while loop is used to execute a block of code repeatedly while a condition is true. It continues looping as long as the specified condition remains true.

21.   What is the output?

```java
float a = 7.3f;
if(a == 7.3)
    System.out.print("Hi");
else
    System.out.print("Know Program");
```

    a. Hi

    b. Know Program

    c. Compiled Successfully, No Output.

    d.   Compile-time error

Ans: b. Know Program

Explanation: Due to a being a float and 7.3 being a double, the direct comparison a == 7.3 is false, so the program prints "Know Program".

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22.   What is the output?

double a = 7.3;

if(a = 7.3)

   System.out.print("Hi");

else

   System.out.print("Know Program");

a. Hi

b. Know Program

c. Compiled Successfully, No Output.

d.   Compile-time error

Ans: d. Compile-time error

Explanation:The output is "Know Program" because 7.3f (a float) and 7.3 (a double) have different precision, so 7.3f == 7.3 is false and the else block executes.

23.   What will be the output of the following snippet?

if(1>3)

      System.out.println("Know Program");

a. Know Program

b. Other Output

c. Compiled Successfully, No Output.

d. Compile-time error

Ans: c. Compiled Successfully, No Output.

Explanation: The code compiles successfully but produces no output because the condition 1 > 3 is false, so the println statement inside the if block is not executed.

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24.   What will be the output of the following snippet?

```
if(5<4)

    System.out.println("Hi");

else

    System.out.println("Hello");
```

a. Hi

b. Hello

c. Compiled Successfully, No Output.

d.   Compile-time error

Ans: b. Hello

Explanation: The output is "Hello" because the condition 5 < 4 is false, so the code in the else block is executed. The extra closing brace is unnecessary but does not affect the output.

25.   What will be the output of the following snippet?

```
if(a<b)

    System.out.println("Hi");

else

    System.out.println("Hello");
```

a. Hi

b. Hello

c. Compiled Successfully, No Output.

d.   Compile-time error

Ans: d. Compile-time error

Explanation:The code results in a compile-time error because variables a and b are used without being declared or initialized

26. What will be the output of the following snippet?

Int a=10;

if(a<=0){

  if(a==0){System.out.println("1 ");}

  else { System.out.println("2 ");}}

System.out.println("3 ");

 a. 1 2

 b.   2 3

 c. 1 3

 d. 3

Ans: d.3

Explanation: The output is "3" because the outer if condition is false, so only the final System.out.println("3") executes.

27. What will be the output of the following snippet?

boolean x = true;

boolean y = false;

 if (x && y) {System.out.println(true); }

 else {System.out.println(false); }

 a. true

 b. false

 c. Compilation Error

 d. Runtime Error

Ans: b. false

Explanation: The output is "false" because the condition x && y evaluates to false (since y is false). Therefore, the else block executes, printing false.

28.   What will be the output of the following snippet?
```
boolean x = true;
boolean y = false;
if (x || y) {System.out.println(true); }
else { System.out.println(false);}
```
   a. true
   b. false
   c. Compilation Error
   d. Runtime Error

Ans: a. true

Explanation: The output is "true" because the condition x || y evaluates to true (since x is true). Thus, the if block executes, printing true.

29.   What will happen if the condition in an if statement is false and there is no else block?
   a. The program will throw an error.
   b. The if block will execute, and the program will continue.
   c. The if block will not execute, and the program will continue to the next statement.
   d. The program will halt execution.

Ans: c. The if block will not execute, and the program will continue to the next statement
Explanation:If the condition in an if statement is false and there is no else block, the if block will not execute, and the program will continue with the next statement after the if statement.

30.   Which control structure is used to choose between multiple options based on the value of an expression?
   a. if-else
   b. for
   c. switch
   d. while

Ans: c. switch
Explanation: In a switch statement, if no case matches the value of the expression, the default block is executed if it is present. If there is no default block, no code is executed

31. In a switch statement, if no case matches the value of the expression, which block of code is executed?
   a. The default block.
   b. The first case block.
   c. The break block.
   d. No code is executed.

Ans: a. The default block.

Explanation: In a switch statement, if no case matches the value of the expression, the default block is executed if it is present. If there is no default block, no code is executed.

32. What is the primary purpose of a break statement in a loop?
   a. To exit the current iteration of the loop.
   b. To restart the loop from the beginning.
   c. To terminate the entire program.
   d. To exit the loop and continue with the code following the loop.

Ans: d. To exit the loop and continue with the code following the loop.

Explanation: The primary purpose of a break statement in a loop is to exit the loop immediately and continue with the code that follows the loop, regardless of the loop's condition.

33. What is the purpose of the continue statement in a loop?
   a. To exit the loop entirely.
   b. To skip the remaining code in the current iteration and proceed to the next iteration.
   c. To reinitialize the loop variable.
   d. To terminate the entire program.

Ans: b. To skip the remaining code in the current iteration and proceed to the next iteration.

Explanation: It effectively bypasses the rest of the loop's body for the current iteration.

34.   Which of the following statements about else if in Java is true?
   a. You can have multiple else if blocks in a single if-else construct.
   b. You can only have one else if block in an if-else construct.
   c. The else if block must always be followed by an else block.
   d. else if blocks can only be used with while loops.

Ans: a. You can have multiple else if blocks in a single if-else construct.

Explanation: multiple else if blocks in a single if-else construct, allowing for more complex decision-making with multiple conditions. The else if blocks are used to test additional conditions if the preceding if or else if conditions are false.

35.   In Java, which control structure is used to execute a block of code a specific number of times?
   a. While
   b. For
   c. Switch
   d. do-while

Ans: b. For

Explanation: In Java, the for loop is used to execute a block of code a specific number of times. It is ideal for scenarios where the number of iterations is known beforehand.

36.   What happens if you use a return statement inside a for loop?
   a. The program will exit the for loop but continue executing the rest of the code in the method.
   b. The for loop will restart from the beginning.
   c. The program will exit the method and return to the calling code.
   d. The return statement will be ignored.

Ans: c. The program will exit the method and return to the calling code.

Explanation: If you use a return statement inside a for loop, the program will exit the method immediately and return to the calling code. The for loop will not continue or restart.

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37. What is the purpose of the default case in a switch statement?
   a. To handle the case where none of the case labels match.
   b. To specify the default value of the expression being switched on.
   c. To exit the switch statement.
   d. To force a break from the switch statement.

Ans: a. To handle the case where none of the case labels match.

Explanation: The default case in a switch statement handles situations where none of the specified case labels match the switch expression. It provides a fallback action when no other case is matched.

38. The boolean expression boolean result = true && (false || !false); evaluates to:
   a. true
   b. false
   c. Null
   d. Compilation error

Ans: a. true

Explanation: The expression true && (false || !false) evaluates to true because !false is true, making the inner expression false || true evaluate to true. Therefore, true && true results in true.

39. If the expression ((a > b) && (a > c)) is evaluated, it will return true if:
   a. a is greater than both b and c
   b. a is greater than b or c
   c. a is less than b and c
   d. a is equal to either b or c

Ans: a. a is greater than both b and c

Explanation: The && operator requires both conditions to be true for the entire expression to be true.

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40. The expression ((a > b) || (a > c)) will evaluate to true if:
    a. a is greater than both b and c
    b. a is greater than either b or c
    c. a is less than both b and c
    d. a is equal to b and c

   Ans: b. a is greater than either b or c

Explanation: The || operator requires at least one of the conditions to be true for the entire expression to be true.

41. The condition! is Valid will evaluate to true if:
    a. isValid is true
    b. isValid is false
    c. isValid is null
    d. isValid is a non-boolean value

Ans: b. isValid is false

Explanation: The (!) operator inverts the boolean value, so! false becomes true

42. If x is 10, what will be the result of the expression !(x < 5)?
    a. true
    b. false
    c. Null
    d. Compilation error

Ans: a. true

Explanation: : x < 5 is false because 10 is not less than 5. The ! operator negates false, resulting in true

43.   The expression if (!(a == b)) will execute its block if:
   a. a is equal to b
   b. a is not equal to b
   c. a is greater than b
   d. a is less than b

Ans: b. a is not equal to b

Explanation: The != operator checks for inequality, so !(a == b) is true when a is not equal to b

44.   Given the expression boolean result = (x > 5) && (y < 10) || (z == 10); , which of the following statements is true?
   a. `result` is `true` if `x` is greater than `5` and `y` is less than `10`, or `z` is exactly `10`.
   b. `result` is `true` if `x` is less than `5` and `y` is greater than `10`, or `z` is not `10`.
   c. `result` is `true` if `x` is less than or equal to `5` and `y` is greater than `10`.
   d. `result` will always be `false`.

Ans: a. `result` is `true` if `x` is greater than `5` and `y` is less than `10`, or `z` is exactly `10`.

Explanation: The `&&` operator requires both conditions to be true, while the `||` operator means either condition can be true. So if either `(x > 5) && (y < 10)` or `z == 10` is true, then `result` will be `true`

45.   What will be the output of the following code snippet?
```
boolean a = false;
boolean b = true;
boolean result =! (a || b) && (a && b);
System.out.print(result);
```
   a. true
   b. false
   c. null
   d. Compilation error

Ans: b. false

Explanation: a || b is true, so !(a || b) is false. a && b is false, so false && false results in false.

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46. Determine the result of the following condition:

   boolean x = true;

   boolean y = false;

   boolean result = (x && y) || (x || !y);

System.out.print(result);

System.out.print(result);

   a. true
   b. false
   c. null
   d. Compilation error

Ans: a. true

Explanation: x && y is false, but x ||! y is true, so false || true results in `true.

47. What will be the result of the following expression?

   boolean a = true;

   boolean b = true;

   boolean c = false;

   boolean result = (a && b) || (c &&! b);

System.out.print(result);

   a. true
   b. false
   c. null
   d. Compilation error

Ans: a. true

Explanation: a && b is true, and c && !b is false`. Thus, `true || false` results in true .

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48.   How many else statements can be there in an if statement?

a. only one
b. Two
c. One or more
d. Three

Ans: a. only one

Explanation: You can have one else statement for an if statement, but you can have multiple else if statements in between the if and the final else.

49.   How many elif statements can be there in an if statement?

a. Only one
b. Two
c. One or more
d. zero or more

Ans: a. zero or more

Explanation: java can have zero or more elif statements in an if statement. There can be no elif statements, just one, or many.

50.   What happens when no condition is true in an if... else if ...statement(no else) in Java?

a. The program throws an error
b. The else block is executed
c. The if block is executed
d. The program skips the if block

Ans: d. The program skips the if block

Explanation: In an if... else if statement with no else block in Java, if none of the conditions are true, then the program simply skips the if and else if blocks. It does nothing for that part of the code.

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