These questions are intended to test and reinforce your understanding of key Java concepts. For each term in the left column, write the letter of either description that best matches the term from the right column

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| **Matching** | |
| Term | Description |
| 1. && \_\_\_\_\_\_C\_\_\_\_\_ 2. || \_\_\_\_\_I\_\_\_\_\_ 3. ! \_\_\_\_J\_\_\_\_\_\_ 4. Switch \_\_\_A\_\_\_\_\_ 5. Continue \_\_B\_\_\_\_ 6. Break \_\_\_\_F\_\_\_\_ 7. For repetition statement \_\_D\_\_\_ 8. Do … while \_\_I\_\_\_ repetition statement 9. | \_\_\_\_\_\_H\_\_\_\_\_\_ 10. Off-by-one error \_\_\_\_G\_ 11. & \_\_\_\_\_\_\_E\_\_\_\_\_\_\_\_\_\_ 12. Constant \_\_\_\_\_K\_\_\_\_ | 1. Handles a series of decision, in which a particular variable or expression is tested for values it can assume and different actions are taken. 2. Skips any remaining statements in the body of a repetition statement and proceeds with the next iteration of the loop. 3. Boolean logical AND 4. Handles all of the details of counter-controlled repetition. 5. Conditional AND. 6. Causes immediate exit from a repetition statement. 7. Can be caused by the use of an incorrect relational operator or using an incorrect final value of a loop counter in the condition of a repetition statement. 8. Conditional OR. 9. Boolean logical inclusive OR. 10. Logical negation. 11. A variable which contains a value which does not change for the entire program. 12. Repetition statement that tests the loop-continuation condition at the end of the loop, so that the body of the loop will execute at least once. |

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| **Fill in the Blank** |

**Fill in the blanks for each of the following statements:**

1. The %b format specifier causes the value of a Boolean expression to be output as the word \_\_\_\_\_\_\_\_\_\_ or the word \_\_\_\_\_\_\_\_\_\_\_\_ based on the expression’s value.
2. Typically, \_\_\_\_\_\_\_\_\_\_ statements are used for counter-controlled repetition and \_\_\_\_\_\_\_ statements are used for sentinel-controlled repetition.
3. In most programs, it is necessary to include a(n) \_\_\_\_\_\_\_\_\_\_ statement after the statements for each case in a switch statement.
4. \_\_\_\_\_\_\_\_\_\_\_operators may be used to form complex conditions by combining conditions.
5. Placing a semicolon after the header of a for statement in normally a(n) \_\_\_\_\_\_\_\_ error.
6. Programs should control counting loops with \_\_\_\_\_\_\_\_\_ values.
7. Infinite loops occur when the loop-continuation condition in a repetition statement never becomes.
8. The expression in parentheses following keyword switch is called the \_\_\_\_\_\_\_\_.

Answer the following g questions in the space provided. Your answers would be concise; aim for two or three sentences.

1. What is required to perform counter-controlled repetition?
2. Why should programs control counting loops with integers and not with floating-point numbers?
3. Explain why placing a semicolon after the header of a for statement is a logic error and not a compilation error.
4. Differentiate between the while and the do…while repetition statements.
5. Explain why an infinite loop can occur and how one can be prevented.

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| **Programming Output** |

For each of the given program segments, read the code and write the output in the space provided below each program. [*Note:* Do not execute these programs on a computer.]

For the following questions, assume that the code segments are contained within the main method of a java application.

***For questions 27-30, use the following code segment:***

1. int startingValue;
2. int terminatingValue;
3. int stepValue;
4. for( int i = startingValue; i < terminatingValue; i += stepValue)
5. System.out.printf(“%d”, i);
6. What will be the output if the following code is placed at line 4 of the preceding code?

1 startingValue=0;

2 terminatingValue = 5;

3 stepValue = 1;

***Your answer:***

0 1 2 3 4

1. What will be the output if the following code is placed at line 4 of the preceding code?
2. startingValue = -3;
3. terminatingValue = 2;
4. stepValue = 1;

***Your answer:***

-3 -2 -1 0 1

1. What will be the output if the following code is placed at line 4 of the preceding code?
2. startingValue = 6;
3. terminatingValue = 5;
4. stepValue = 1;

***Your answer:*** Nothing happened

1. What will be the output if the following code is placed at line 4 of the preceding code?
2. startingValue = 0;
3. terminatingValue = 5;
4. stepValue = 3;

***Your answer:*** 0 3

***For questions 31-33, use the following class definition:***

1. int startingValue;
2. int terminatingValue;
3. int stepValue;
4. for (int i = startingValue; i <= terminatingValue; i += stepValue )
5. {
6. switch( i )
7. {
8. case 0:
9. System.out.print(“Hello there, “);
10. break;
11. case 1:
12. System.out.println(“What’s up? “);
13. break;
14. case 2:
15. System.out.println(“How are you doing? “);
16. break;
17. case 3:
18. System.out.println(“Terrific. “);
19. break;
20. case 4:
21. System.out.println(“Beautiful day isn’t it? “);
22. break;
23. case 5:
24. System.out.println(“Yes it is. “);
25. break;
26. default:
27. System.out.print(“See you later. “);
28. }// end switch
29. }//end for
30. What will be the output if the following code is placed at line 4 of the preceding class definition?
31. startingValue = 0;
32. terminatingValue = 6;
33. stepValue = 2;

***Your answer:***

Hello there, How are you doing?

Beautiful day isn’t it?

See you later.

1. What will be the output if the following code is placed at line 4 of the preceding code?
2. startingValue = 0;
3. terminatingValue = 6;
4. stepValue = 3;

***Your answer:***

Hello there, Terrific.

See you later.

1. What will be the output if the following code is placed at line 4 of the preceding code?
2. startingValue = 3;
3. terminatingValue = 2;
4. stepValue = 1;

***Your answer:***

Nothing happened