

## FUNDAMENTALS

### 1. Sample Code

```
int count=0, i=0;
do {
    count += i;
    i++;
    if (count > 5) break;
} while (i<=4);
```

What is the value of the variable count when the sample code above is executed?

- a. 0
- b. 1
- c. 4
- d. 6
- e. 10

### 2. Sample Code

```
int a=3;
int b=0;
switch(a)
{
    case 1:
        b=a+2;
    case 2:
        b=a+3;
    case 3:
        b=a+4;
    case 4:
        b=a+5;
    case 5:
        b=a+6;
    default:
        b=a*2;
} // Line A
```

What is the value of b at Line A in the sample code above?

- a. 5
- b. 6
- c. 7
- d. 8
- e. 9

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3. 

```
Line 1    String[] arr = new String[5];
Line 2    int[] arr1 = new int[5];
Line 3    Scanner kb = new Scanner(System.in);
Line 4    for(int i=0;i<5;i++)
Line 5        {
Line 6        System.out.println(" Enter Example:");
Line 7        arr[i] = kb.nextLine();
Line 8        System.out.println("Enter Another Example:");
Line 9        arr[i] = kb.nextInt();
Line 10       }
```

Which change do you make to the sample code above to add values to both Example arrays?

- a. Remove Line 1 from the code.
- b. Change Line 2 to `String[] arr1 = new String[5];`
- c. Remove Line 9 from the code.
- d. Add `kb.nextLine();` after Line 9.
- e. Add `Scanner kb = new Scanner(System.in);` after Line 10.

4. 

```
int i1 = 2;
int i2 = 5;
double d;
d = 3 + i1 / i2 + 2;
```

What is the value of d after the sample code above is executed?

- a. 3.0
- b. 5.0
- c. 5.2
- d. 5.4
- e. 7.5
- f. 5.

5. Which command line do you use to tell the javac compiler where compiled class files go?

- a. -s
- b. -d
- c. -output
- d. -cp
- e. -target

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6. A loss of information results when you cast:
- a. a short into a float.
  - b. a byte into an int.
  - c. a float into a double.
  - d. an int into a byte.
  - e. an int into a double.
7. JIT compilation happens within the runtime environment at:
- a. run time, when a class is loaded.
  - b. run time, before the code is first executed.
  - c. run time, when the system pauses for the garbage collection.
  - d. run time, during the bytecode verification phase.
  - e. Compilation time, with the javac compiler.
8. You are using the most current compiler and want to compile code only meant to be compliant with prior versions of Java. You want it to be runnable with the prior version runtime and you do not want to permit constructs like a for-each loop.

Referring the above scenario, which command do you use to accomplish this?

- a. `javac -v ***prior version*** -source *** prior version*** Source.java`
- b. `javac -Xversion *** prior version*** Source.java`
- c. `javac -source ***prior version*** -target *** prior version*** Source.java`
- d. `javac -version *** prior version*** Source.java`
- e. `javac -target ***prior version*** -Xversion *** prior version*** Source.java`

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9. `javac Main.java`  
classes in application are  
Main.java: class Main  
Main.java: class Envelope  
Letter.java: class Envelope {  
Letter.java: public class Letter {  
.Letter.java:12: duplicate class :Envelope  
class Student {

Based on the sample output of the compiler above, what is the error in the code?

- a. The Main.java: class was not made public
- b. The Letter class was listed after the Main class
- c. The classes have not been declared properly
- d. The Letter class is a public class
- e. There are two classes called Envelope

10. Which command line do you use to extract the contents of jar file tools.jar?

- a. `jar evf tools.jar`
- b. `java java.util.zip.Jar -r tools.jar`
- c. `tar fx tools.jar`
- d. `jar xf tools.jar`
- e. `unjar tools.jar`

11. `String names[] = {"one", "two", "three"};`  
`for (int i=0; i<names.length; i++) {`  
    `System.out.println(names[i]);`  
`}`

Which code string do you use to convert the for loop in the sample code above to a for each loop?

- a. `foreach(names) {`  
    `System.out.println(names.next());`  
`}`
- b. `for (String name: names) {`  
    `System.out.println(name);`  
`}`
- c. `for(names : String name) {`  
    `System.out.println(name);`  
`}`
- d. `foreach(String[] names:name) {`  
    `System.out.println(names);`  
`}`
- e. `foreach(String name: names) {`  
    `System.out.println(name);`  
`}`

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12. You are working on the code when you receive the following:  
Exception in thread "main"  
java.lang.UnsupportedClassVersionError: Bad version number in  
.class file  
Based on the scenario above, the error message indicates that  
the:
- a. Code will not compile.
  - b. Main class does not have a proper class declared.
  - c. Class file does not have a proper method in the "main" thread.
  - d. Code was compiled in a higher version of java than what is currently running
  - e. Exception does not have proper class file set up in the "main" folder

13. You determine the size of an array of ints passed to a method by:
- a. using the array's getSize() method.
  - b. initializing the array until an exception is thrown.
  - c. using the sizeof() operator.
  - d. using the array's size() method.
  - e. using the array's length field.

14. `int[] Array1={3,6,2,9,5,8};`  
`int[] Array2=Array1;`  
`int[] Array3=Array2;`  
`Array1[2]=2;`  
`Array2[3]=5;`  
`Array3[4]=7;`  
`Array2[4]=Array3[4];`

What is the value of `Array1[4]` when the sample code above is executed?

- a. 2
- b. 3
- c. 7
- d. 8
- e. 9

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15. While starting a VM you receive the following error:

"Error occurred during initialization of VM Could not reserve enough space for object heap, Could not create the Java virtual machine."

Based on the scenario above, how do you resolve this error?

- a. Run the JVM with `-XX:MaxHeapSize=***`.
- b. Downsize the memory settings to free up space for the heap size.
- c. Add more memory to the box you are using to increase bandwidth.
- d. Run the VM locally to clear the memory allocation, then push to remote machine.
- e. Edit the properties file to change your heap size to handle the VM startup.

16. Which of the following identifiers are valid Java identifiers?

- a. A\$B
- b. helloWorld
- c. transient
- d. java.lang
- e. Public
- f. 1980\_s

17. What is the result of the following code?

- ```
3. int x = 10, y = 3;
4. if(x % y == 2)
5.     System.out.print("two");
6.     System.out.print(x % y);
7. if(x % y == 1)
8.     System.out.print("one");
```
- a. two
  - b. two1
  - c. two2
  - d. one
  - e. lone

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**18.** What is the result of the following code?

```
4. int x = 5, y = 10;
5. boolean b = x < 0;
6. if(b = true) {
7.     System.out.print(x);
8. } else {
9.     System.out.print(y);
10. }
A. Compiler error on line 5.
B. Compiler error on line 6.
C. 5
D. 10
E. The code compiles but there is no output.
```

**19.** What is the result of the following code?

```
4. char c = 'a';
5. for(int i = 1; i <= 3; i++) {
6.     for(int j = 0; j <= 2; j++) {
7.         System.out.print(c++);
8.     }
9. }
a. abcdefghi
b. bcdefghij
c. abcdef
d. abcabcabc
e. The code does not compile.
```

**20.** What is the result of the following code?

```
10. String [] values = {"one", "two", "three"};
11. for(int index = 0; index < values.length; index++) {
12.     System.out.print(values[index]);
13. }
14. System.out.print(index);
a. onetwothree
b. onetwothree2
c. onetwothree3
d. onetwothree4
e. The code does not compile.
```

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21. What is the output of the following program?

```
1. public class Average {  
2.     public static void main(String [] args) {  
3.         int [] scores = {2,4,5,5,6,8};  
4.         int sum = 0;  
5.         for(int x : scores) {  
6.             sum += x;  
7.         }  
8.         System.out.println(sum / scores.length);  
9.     }  
10. }
```

- a. 30
- b. 6
- c. 4
- d. 5
- e. The code does not compile.

22. What is the output of the following code?

```
5. int count = 0;  
6. rowloop : for(int row = 1; row < = 3; row++) {  
7.     for(int col = 1; col < = 2; col++) {  
8.         if(row * col % 2 == 0)  
9.             continue rowloop;  
10.        count++;  
11.    }  
12. }  
13. System.out.println(count);
```

- a. 1
- b. 2
- c. 3
- d. 4
- e. 6
- f. The compiler error at line 8



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23. What is the result of the following code?

```
5. int m = 9, n = 1;
6. int x = 0;
7. while(m > n) {
8.   m--;
9.   n += 2;
10.  x += m + n;
11. }
12. System.out.println(x);
```

- a. 11
- b. 13
- c. 23
- d. 36
- e. 50
- f. The compiler error at line 10

24. What is the result of the following code?

```
7. int y = 1;
8. do {
9.   System.out.print(y + " ");
10. }while(y <= 10);
```

- a. The code does not compile.
- b. 1 2 3 4 5 6 7 8 9
- c. 1 2 3 4 5 6 7 8 9 10
- d. 1 2 3 4 5 6 7 8 9 10 11
- e. ' 1 ' an infinite number of times

25. What will be the output when running the following program?

```
public class MyClass {
    public static void main(String[] args) {
        int i=0;
        int j;
        for (j=0; j<10; ++j) { i++; }
        System.out.println(i + " " + j);
    }
}
```

Select the correct answer(s).

- (a) The first number printed will be 9.
- (b) The first number printed will be 10.
- (c) The first number printed will be 11.
- (d) The second number printed will be 9.
- (e) The second number printed will be 10.
- (f) The second number printed will be 11.

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26. What is the value of c after the code is executed?

```
inta=5,b=7;  
intc = a+=2*3+b--;
```

- a. 5
- b. 17
- c. 18
- d. 21
- e. 22