

3. Which of the following is true regarding the Java Virtual Machine (JVM)?  
(Choose all correct answers) \*  
(1 Point)

- It's an interpreter.
- It detects syntax errors.
- It takes Java source code as an input.
- It takes Java byte code as an input.
- It's a compiler.

4. What does the following program print to the console?

```
public class MainClass {  
    public static void main(String[] args) {  
        System.out.println("1+5");  
    }  
}
```

Note: Do not add any extra spaces to your answer. \*  
(1 Point)

1+5

5. What is the name and extension of the file that results from compiling the following code?

```
public class MainClass {  
    public static void main(String[] args) {  
        System.out.println("Welcome to Java!");  
    }  
}*
```

(1 Point)

- MainClass .byte
- MainClass .java
- mainclass .java
- mainclass .class
- MainClass .class

6. NetBeans is: \*  
(1 Point)

- A JVM.
- A JDK.
- An API.
- An operating system.
- An IDE.

7. Which of the following is considered a low-level language?  
(Choose all correct answers) \*  
(1 Point)

Assembly language.

Machine Language.

C++ source code.

Java byte code.

Java source code.

3. Which of the following statements prints the following number to the console:

100 \*

(1 Point)

- `System.out.println("100");`
- `System.out.println("50+50");`
- `System.out.println(50+50);`
- `System.out.println(1+0+0);`
- None of the statements.

4. What is the name and extension of the file that contains the following code?

```
public class Test {  
    public static void main(String[] args) {  
        System.out.println("1+3+4+5=");  
        System.out.println(1+3+4+5);  
    }  
} *
```

(1 Point)

- test .java
- Test .java
- Test .class
- test .class
- Test .src

5. Which of the following is true about the Java compiler? \*  
(1 Point)

- It translates source code into byte code.
- It translates source code into machine code.
- It translates source code into assembly code.
- It translates byte code into machine code.
- It translates assembly code into machine code.



6. Which of the following is platform independent?

(Choose all correct answers) \*

(1 Point)

None of the above.

Assembly code.

Java byte code.

Machine code.

Java source code.

7. Which of the following refers to the Java library? \*  
(1 Point)

- JDK
- Java API
- IDE
- Java SDK
- Java SE

3. Which of the following values, if assigned to the variable number will cause the following code to print 1 to the console?

```
int number = .....;
int factor=number/2;
while(factor>0){
    if(number % factor == 0)
        break;
    factor--;
}
System.out.println(factor); *
```

(1 Point)

- 17
- 25
- 21
- 10
- 33

4. Which of the following conditions will cause the following loop body to be executed exactly three times when placed in the continuation condition of the while statement?

```
int x = 5, y = 2;
while(.....){
    System.out.println("Not yet!");
    x++;
    y*=2;
} *
```

(1 Point)

`x%7!=0 || y>10`

`y%x == 0`

`y%x != 0`

`x<10 && y<10`

`x+y<10`

5. What is the statement that should be written instead of the comment in order to complete the for loop such that it prints numbers from 1 to 10 on one line space separated as follows:

1 2 3 4 5 6 7 8 9 10

```
for(int i=1; i<=10; i++)  
    //statement (//statement)
```

Note: do not add extra spaces in your answer. \*  
(1 Point)

```
System.out.print(i+" ");
```

6. Which of the following statements will print the number 5 to the console? \*  
(1 Point)

- `System.out.println(27/5.0f);`
- `System.out.println(27/5.0);`
- `System.out.println(27.0/5);`
- `System.out.println(27.0/5.0f);`
- `System.out.println(27/5);`

7. Which of the following values requires explicit casting in order to be assigned to the following variable?

float number; \*  
(1 Point)

33.3

33

33.0

'a'

33.0f

3. Which of the following statements print the number 0.3333333333333333 to the console? \*

(1 Point)

`System.out.println(1/3.0);`

`System.out.println(1.0/3.0f);`

`System.out.println(1/3.0f);`

`System.out.println(1.0f/3.0f);`

`System.out.println(1/3);`



4. Which of the following statements causes a syntax error? \*  
(1 Point)

`byte w = 200;`

`char z = 53.2;`

`int x = 'a';`

`int m = (int)4.666;`

`double y = 5;`

5. Which of the following statements, if inserted instead of the comment in the following code, does NOT cause an infinite (or very long) loop to occur?

```
int count = 20, sum=0;
while (count > 0){
    sum += count;
    //statement (//statement).
} *
```

(1 Point)

count \*= 2;

count++;

--count;

count += 2;

count--;

6. Write a Java statement that defines a constant double whose name is MAX and its value is 3.55.

Note: do not add extra spaces in your answer. \*

(1 Point)

```
final double MAX=3.55;
```

7. How many times does the following code print the statement "Welcome to Java!" to the console?

```
for(int i=0; i<10; i++)  
    for(int j=0; j<20; j++)  
        System.out.println("Welcome to Java!");
```

Note: do not add any spaces to your answer. \*  
(1 Point)

3. Assuming that they are all defined in the same class, which of the following methods will be called for the following method invocation?

`compute(3.5, 4, "HI"); *`

(1 Point)

- `public static int compute(int x, int y, String z)`
- `public static int compute(double x, int y, String z)`
- `public static void compute(int x, double y, String z)`
- `public static void compute(double x, double y, String z)`
- `public static void compute (double x, int y)`

4. Given the following code, what are the values of the variables x and y after calling the compute method (line#5)?

```
1. public static void main(String [] args){
2.     int x = 5;
3.     int y = 10;
4.     y = compute(x,y);
5.     // value of x and y here?
6. }
7. public static int compute(int num1, int num2){
8.     int s=0;
9.     while(num1<num2){
10.         s+=num1;
11.         num1++;
12.     }
13.     num2=0;
14.     return s;
15. }*
```

(1 Point)

- x = 5, y = 35
- x = 10, y = 0
- x = 5, y = 0
- x = 5, y = 10
- x = 10, y = 35

5. Given the following methods, which variable(s) declaration will cause a syntax error?

```
1. public static void main(String [] args){
2.     int num1 = 4;
3.     myMethod(num1, num1);
4. }
5. public static void myMethod(int num1, double num2){
6.     for(int i= num1, j= num2; num1!=num2; i++, j--)
7.         System.out.println(i+ " "+j);
8.
9.     int j=num2*num1;
10.    System.out.println(j);
11.
12.    for(int i=0; i<num1; i++)
13.        System.out.println(i)
14.
15.    int num2 = num1*num1;
16.    System.out.println(num2);
17. } *
```

(1 Point)

j

num1

Both answers are considered correct.

num2

i

num1 & num2

6. Which of the following statements correctly invoke (call) the following method?

```
public static double myMethod(double y) *
```

(1 Point)

- a. myMethod(3);
- b. double x = mymethod(4.2);
- c. int x = myMethod(3.4);
- d. System.out.println(myMethod(1.5));
- e. a & d



7. How many activation records will be in the stack when the statement @line-6 is executed?

```
1. public class{
2.     public static void main(String [] args){
3.         System.out.println(max(3.5, 4.1, 2.5));
4.     }
5.     public static double max(double x, double y){
6.         if(x>y) return x;
7.         else return y;
8.     }
9.     public static double max(double x, double y, double z){
10.        double max = max(x,y);
11.        if(z>max) return z;
12.        else return max;
13.    }
14. }*
```

(1 Point)

- 1
- Statement at line 6 never gets executed.
- 3
- 4
- 2

3. Which of the following methods overloads the following method?

`public static void compute(int x, double y) *`

(1 Point)

- `public static void compute (int i, double j)`
- `public static int compute(int x, double y)`
- `public static int compute(double y)`
- `public static void Compute(int x)`
- `public static void computeNumber(int x)`

4. Given the following method called myMethod, what does the following statement print to the console?

```
System.out.println(myMethod(3,5));
```

```
public static int myMethod(int x, int y){  
    int i;  
    int sum=0;  
    for(int i=x; i<=y; i++){  
        sum += i;  
    }  
    return sum;  
} *
```

(1 Point)

- 12
- 0
- The code does not print anything because it has a run-time error.
- 7
- The code does not compile because it has a syntax error.

5. Which of the following correctly invokes the following method?

```
public static void printInfo(int x, String y) *
```

(1 Point)

System.out.println("Info: "+printInfo(3, "HI"));

printInfo("Programming", 3);

printInfo(5, "Java");

printInfo(8, Hello);

int y = printInfo(10, "x");

6. Which of the following statements would change the value of the variable x (of the main method) when replaced instead of the comment (inside the modify method)?

```
public static void main(String [] args){
    int x =5;
    int y =10;

    int z = modify(x, y);
}
public static int modify(int i, int j){
    //statement //statement
    return i+j;
} *
```

(1 Point)

- x = i+j;
- No statement could change x inside the method modify.
- return i--;
- i += j;
- i++;

7. Which of the following is a correct method header? \*  
(1 Point)

- `public static int method2( )`
- `public static double method3`
- `public static double (int x, double y)`
- `public static double,int method4 (double x, int y)`
- `public static method1(int x)`

3. Given a two dimensional array called list, write a foreach loop that prints the lengths of its rows, space separated on the same row. \*  
(1/1 Point)

```
for(double[] e : list){  
    System.out.print(e.length + " ");  
}
```

4. In the duplicateArray method shown below, write the missing statement that should be placed in line2 of the method that declares and creates the array newArray with the correct size.

Note that the method takes an array of integers, and returns a new array of integers that includes elements of the passed array duplicated. For example, if the passed array is {1,2,3,4} it returns the array {1,2,3,4,1,2,3,4}.

```
1. public static int [] duplicateArray(int [] array){  
2.     // missing statement  
3.     for(int i=0; i<array.length; i++){  
4.         newArray[i]=array[i];  
5.         newArray[i+array.length]=array[i];  
6.     }  
7.     return newArray;  
8. } *
```

(1/1 Point)

```
int[] newArray = new int [array.length*2];
```



5. What are the values of array myArray elements after executing the for loop (@ line 5)

```
1. public static void main(String[] args) {  
2.     double[] myArray = addElement(1.5);  
3.     for(int i=1; i<3; i++)  
4.         myArray = addElement(0.5*i, myArray);  
5.  
6. }  
7. public static double[] addElement(double element, double... array){  
8.     double [] newArray = new double[array.length+1];  
9.     newArray[0] = element;  
10.    for(int i=1; i< newArray.length; i++)  
11.        newArray[i] = array[i-1];  
12.    return newArray;  
13.} *
```

(0/1 Point)

- 1.5
- 1.0 0.5
- 0.5 1.0 1.5
- 1.0 0.5 1.5 ✓
- A run-time error will occur because of a NullPointerException.
- The code will not compile because it includes a syntax error.

6. Given the following code, what is the value of the elements of array x after returning from the method arrayProcessing?

```
1. public static void main(String[] args) {  
2.     int [] x = {2, 4, 6, 8, 10};  
3.     int [] y = new int[4];  
4.     arrayProcessing(x,y);  
5. }  
6. public static void arrayProcessing(int [] array1, int [] array2){  
7.     for(int i=0; i<array1.length; i++)  
8.         array1[i]=array2[i];  
9. } *
```

(1/1 Point)

- The code will not compile cause elements of array y are not initialized.
- 0 0 0 0
- 2 4 6 8 10
- 2 4 6 8 0
- 0 0 0 0 10
- A run-time error will occur because of an ArrayOutOfBoundsException. ✓

7. Given a one-dimensional array of integers named x, write a piece of code that prints even numbers in the array to the console each on a new line. \*

(1/1 Point)

```
for (int i = 0; i < x.length; i++){  
    if(x[i] % 2 == 0){  
        System.out.println(x[i]);  
    }  
}
```