

**Term 1 Lessons 1 - 24 Test**

**Directions:** Choose the best answer to the multiple choice questions. Bubble in your answer on your answer document. There are two Free Response Questions that require you to write your code on this test packet. There is partial credit available for the free response questions. Only write your code on the test paper itself and do not bubble anything on the answer document for numbers 21 or 22. There is one Extra Credit question that must be answered exactly correct to receive 2 points of extra credit. Answer that question where indicated.

- Which of the following is not a primitive data type?
  - int
  - double
  - char
  - boolean
  - String
- In AP Computer Science A class, how do you pronounce []?
  - "brackets"
  - "square brackets"
  - "array"
  - "open bracket, closing bracket"
  - "That's not a word, Keithley"
- Choose 2 Answers.** Which two lines of code **MUST** be included in order to run a Java program?
  - scanner import
  - scanner initialization
  - main method
  - class declaration
  - a print statement
- The method `isEven` below is intended to take an `int` as a parameter and return a `boolean` telling whether or not the `int` is even. The condition of the `if`-statement is missing.

```
public static boolean isEven(int a){  
  
    if(/* missing code */){  
        return true;  
    }  
    return false;  
}
```

Which of the following could replace the `/* missing code */` so that `isEven` works as intended?

- `a > 0 a % a == 0`
- `a == 2 || a == 4`
- `a / 2 == 0`
- `a % 2 == 0`
- `a % 2 == 1;`

5. **Choose 2 Answers.** Which of the following are class type data?

- a. double
- b. char
- c. String
- d. boolean
- e. Scanner

6. True or False?

Anything you can do with a for-loop, you can also do with a while-loop.

- a. true
- b. false

7. Assume that x and y are properly initialized boolean variables. What does the following expression evaluate to?

$(x \ \&\& \ !y) \ || \ !(x \ || \ !y)$

- a. always true
- b. always false
- c. true when x and y are the same
- d. true when x and y are different

8. What gets printed by the following code?

```
int num = 8675;
while(num > 0){
    System.out.print(num % 10 + " ");
    num = num / 10;
}
```

- a. 8 6 7 5
- b. 867 86 8
- c. 5 7 6 8 8 7 5
- d. 5 7 6 8
- e. 5 7 6 8 8

9. What gets printed by the following code?

```
String word = "KABOOM!";
for(int i = 1; i < word.length(); i++){
    System.out.print(word.charAt(i));
}
```

- a. KABOOM!
- b. ABOOM!
- c. AAAAAAA
- d. 1234567
- e. 0123456

10. Consider the method `changeWord` below:

```
public static String changeWord(String str){
    String result = "";

    for(int i = 0; i < str.length(); i++){
        if( str.charAt(i) != 'a' && str.charAt(i) != 'e' &&
str.charAt(i) != 'i' && str.charAt(i) != 'o' && str.charAt(i) != 'u' ){

            result = result + str.charAt(i);

        }

    }

    return result;
}
```

What gets returned by the following method call? `changeWord("sequoia")`

- a. sequoia
- b. sq
- c. euoia
- d. aiouges
- e. aioue

Use the below code to answer Questions 11 and 12. Double check that you are bubbling in the correct answer for the correct question.

```
String str = "Computer Science!";
int i = 0;
while(i < str.length()){
    System.out.print(str.substring(i, i + 1));
    i += 2;
}
```

11. What gets printed?

- a. CpeSee
- b. Computer Science!
- c. Cmue cec!
- d. CmueSine
- e. CopuerScene!

12. What is the final value of `i` after the loop stops?

- a. 0
- b. 3
- c. 12
- d. 16
- e. 18

13. What does short circuit evaluation mean for the following code?

```
if(a < b || c != d)
```

- a. if a < b is false it evaluates c != d
- b. if a < b is false it doesn't evaluate c != d
- c. if c != d is true it evaluates a < b
- d. if c != d is false it doesn't evaluate a < b
- e. if a < b is true it doesn't evaluate c != d

14. What are if statements used for in programs?

- a. Repeating commands
- b. Storing data
- c. Numeric calculations
- d. Numeric casts
- e. Making decisions

15. What is output by the following code?

```
int x = 39 % 8;
if (x >= 10)
    System.out.print(1);
else if (x >= 8)
    System.out.print(2);
else if (x >= 6)
    System.out.print(3);
else if (x >= 4)
    System.out.print(4);
else
    System.out.print(5);
```

Handwritten calculation:  $8 \overline{)39} \begin{matrix} 4 \\ \underline{32} \\ 7 \end{matrix}$

- a. 2
- b. 3
- c. 4
- d. 34
- e. 345

16. The following loop is intended to print the even numbers from 20 to 26, inclusive:

```
int x = 20;
while (x < 26) {
    System.out.print(x);
    x++;
}
```

Which of the following changes would allow the code to work correctly?

- a. The x++ needs to be x += 2
- b. The x++ needs to be x += 2 and the x < 26 needs to be <=
- c. The x < 26 needs to be <=
- d. It needs an if statement: if (x % 2 == 0)
- e. Nothing, the code works as written.

17. Which of the following would give me a random number between 3 and 8 inclusive?

- a. `int n = Math.random() * 5;`
- b. `int n = Math.random(3, 8);`
- c. `int n = (Math.random() * 6) + 3;`
- d. `int n = (int)(Math.random() * 5) + 3;`
- e. `int n = (int)(Math.random() * 6) + 3;`

18. Which of the following is used to indicate a new line?

- a. `\l`
- b. `\n`
- c. `\\`
- d. `\"`
- e. `\t`

19. What is output?

```
System.out.println("The answer is: " + 5 + 19);
```

- a. The answer is: 519
- b. The answer is: 19
- c. The answer is: 24
- d. The answer is: 5 19
- e. Nothing is output

20. Describe what this code does:

```
double[] values = new double[5];  
/* missing code - assume the array is properly initialized */  
double total = 0;  
for(int i = 0; i < values.length; i++){  
    total += values[i];  
}  
System.out.println(total / 5);
```

- a. Finds the average of all doubles in the array
- b. Finds the sum of all doubles in the array
- c. Counts how many doubles are in the array
- d. Counts how many doubles in the array are divisible by 5
- e. Prints all doubles found in the array

EXTRA CREDIT:

What gets printed by the following code?

```
String word = "KABOOM!";  
for(int i = word.length() - 1; i >= 0; i--){  
    System.out.print(word.charAt(i));  
}
```

Write your response in the box below

!MOOB AK



Free Response Question 21:

The method `countEvens` takes an `int` array as a parameter and returns the number of even ints found in the array. Check the table below for example calls to the `countEvens` method:

Method call	Return value
<code>countEvens( {4, 5, 16, 3, 1, 12} )</code>	3
<code>countEvens( {1, 3, 5, 9} )</code>	0
<code>countEvens( {2, 7, 9, 4} )</code>	2

Complete the method below:

```
public static int countEvens(int[] nums){
```

```
    int count = 0
```

```
    for(int i = 0; i < nums.length; i++){
```

```
        if (nums[i] % 2 == 0){
```

```
            count++;
```

```
        }
```

```
    }
```

```
    return count;
```

```
}
```

Free Response Question 22:

The method `fizzOrBuzz` takes an `int val` as a parameter and returns a string as follows:

- returns "fizz" if `val` is divisible by 3,
- returns "buzz" if `val` is divisible by 5,
- returns "fizzbuzz" if `val` is divisible by both 3 and 5,
- returns "sorry" if `val` is not divisible by either.

Check the table below for example calls to the `fizzOrBuzz` method. You can assume that `val` will always be greater than or equal to 3:

Method call	Return value
<code>fizzOrBuzz(18)</code>	"fizz"
<code>fizzOrBuzz(25)</code>	"buzz"
<code>fizzOrBuzz(14)</code>	"sorry"
<code>fizzOrBuzz(90)</code>	"fizzbuzz"

Complete the method below:

```
public static String fizzOrBuzz(int val){
```

```
    if (val % 3 == 0 && val % 5 == 0){  
        return "fizzbuzz";
```

```
    }  
    if (val % 3 == 0){  
        return "fizz";  
    }
```

```
    if (val % 5 == 0){  
        return "buzz";  
    }
```

```
    return "sorry";
```

```
}
```