

Course Number: _____ Course Name _____

Semester: _____ Pre/Posttest Year: _____

ID Number (**DO NOT use your name**): _____

This test will NOT impact your course grade. This study is independent of your class.

1. Which of the following answers best describes how space in memory is allocated in the code below?

```
Pillow myPillow = new Pillow();  
Bed myBed;
```

- a. myPillow variable references a Pillow object and myBed variable does not reference a Bed object
- b. space **has not** been allocated for a Pillow object and space **has** been allocated for a Bed object
- c. both have space allocated for the objects
- d. neither have space allocated for the objects

2. Which of the following answers best describes how space in memory is allocated for these variables?

```
int quantity = 9;  
double price = 6.95;  
int model;  
boolean sold;
```

- a. all four variables have the same amount of space allocated
- b. quantity and price have space allocated, model and sold do not have space allocated
- c. price has the most space allocated, the others have less
- d. all four variables have different amounts of space allocated

3. What values are printed out at the end of this code snippet?

```
int i;  
int j = 0;  
for (i = 0; i < 3; i++) {  
    j = i;  
}  
System.out.println(i);  
System.out.println(j);
```

- a. 0
- b. 2
- c. 2
- d. 3
- e. 3

4. What should the values of x and y be, in order to fill all elements of the following array with values of -1?

```
int[] myArray = new
int[10];
int i;
int x;
int y;
for (i = x; i < y; i++) {
    myArray[i] = -1;
}
```

- a. x = 1, y = the length of myArray
- b. x = 0, y = the length of myArray
- c. x = 1, y = the length of myArray - 1
- d. x = 0, y = the length of myArray - 1

5. How many elements are in myArray?

- a. 7
- b. 9
- c. 10
- d. 11

6. What is the value of m after this operation?

```
int b = 5;
int m = 20;
m -= 6 + 2 * 3 + ++b - 8 / 2;    // this is -=, not a typo
```

- a. 14
- b. 13
- c. 6
- d. 7
- e. 22

7. What is the value(s) returned by this method / procedure?

```
public int changeNumbers() {  
    int i;  
    for (i = 0; i < 10; i++) {  
        if (i > 5) {  
            return(i);  
        }  
    }  
    return(-1);  
}
```

- a. 0 is returned.
- b. 6 is returned and the method / function exits.
- c. 6 is returned, the loop exits, and then -1 is also returned.
- d. -1 is returned.
- e. 6, 7, 8, 9, and -1 are all returned.

8. What are the values of i, j, and k after this loop finishes?

```
int i;  
int j = 0;  
int k = 0;  
  
for (i = 0; i < 4; i++) {  
    if (i < 2) {  
        j = i + 2;  
        if (j == 2) {  
            k = 5;  
        }  
    }  
    k = 6;  
}
```

- a. 4, 3, 6
- b. 3, 2, 6
- c. 4, 2, 5
- d. 3, 3, 5

9. Which answer best explains how this code snippet would or would not work?

```
int k;  
for (int i = 0; i < 5; i++)  
    k = i * 2; System.out.println(i);
```

- a. it wouldn't work, because scope is violated
- b. it would work and would print 5
- c. it wouldn't work, because there are no brackets
- d. it would work and would print out every value of i

10. Which of the following answers most accurately describes the parts of the declaration of myArray?

```
int[] myArray = new int[5];
```

- a. type is an integer array, length is 5
- b. type is an array, each element has a value of 5
- c. type is an integer array, each element has a value of 5
- d. type is an integer array, the value of the first element is 5
- e. type is an object array, the constructor is passed a value of 5

11. Which of the following answers most accurately describes the memory allocation of myArray in Q10

- a. memory is allocated for 6 spaces
- b. memory is allocated for 5 spaces
- c. no memory is allocated
- d. memory is only allocated for the first element

12. Which of these best describes the relationship between classes and objects?

- a. Classes and objects are the same thing.
- b. Classes manipulate objects.
- c. Objects are used to create classes.
- d. Classes are like a blueprint, they define objects.

13. Which of these examples best illustrates the use of inheritance?

- a. parent class is the ocean, child classes are a speedboat and a canoe
- b. parent class is mammals, child classes are plants and bacteria
- c. parent class is manufacturers, child classes are consumers and retailers
- d. parent class is computers, child classes are desktops and laptops

14. A software program needs to contain some data in which the only access to that data by the user is through the user interface. Which of the following is the best way to ensure this?

- a. don't display the data
- b. make the variables private and have no non-private accessor methods to these private variables
- c. divide the program into different classes
- d. make sure the data is not in the main class

15. A record of information about shoes uses the following variables. Which statement best describes the relationship between these variables?

```
public class Xyz {  
    double size;  
    int numOfShoes;  
    double price;  
    boolean comfort;  
    Style shoeStyle = new Style();  
    Details shoeDetails = new Details();  
    int shoeScore;  
    boolean velcro;  
}
```

- a. shoeDetails refers to the object that contains the rest of these variables
- b. more information is needed
- c. velcro is an instance variable of shoeStyle
- d. each shoe in the database contains all of these variables
- e. these variables are stored in an array of shoes

16. You've been asked to test a method that, given the year and month, outputs the number of days in the month. Which of the following approaches should be used to generate your test data?

- a. Randomly test valid inputs within a given data range (e.g., year range: 1900 – 2020 & Jan - Dec)
- b. Exhaustively test all possible inputs (e.g., All possible years & all months)
- c. Test representative sets of inputs and outputs from the possible data sets (e.g., B.C. and A.D. years, leap years and non-leap years with relevant month combinations, etc.)
- d. Each of these is equally good

17. A software development review team has the task of carefully examining the software code produced by their company to assure that it meets the company documentation standards. This activity is:

- a. Validation
- b. Verification
- c. Dynamic testing
- d. None of the above

18. When a software development is completed, the executable software (but not the code) is given to the client company. This company now uses its own software engineers to test that the software meets their requirements. This client company is conducting

- a. Unit testing
- b. Integration testing
- c. System testing
- d. Acceptance testing

19. Repeated testing of an already tested program, after modification (e.g., new version of the software), to discover any defects introduced or uncovered as a result of the changes in the software being tested or in another related or unrelated software component:

- a. Re-testing
- b. Confirmation Testing
- c. Regression Testing
- d. Negative Testing

20. What's the value of z after the statement on line 5 is executed?

```
1  int x = 7;  
2  int y = 2;  
3  int z = 0;  
4  
5  z = x + y;
```

- a. 0
- b. 7
- c. 2
- d. 9

21. Given following Java program segment:

```
1  int x, y, z;  
2  x = 10;  
3  y = 11;  
4  z = 2;  
5  y = x + z;  
6  if (x > 10)  
7      x = y;  
8  else  
9      y = x;
```

What is the value of y after line 5 is executed and at the end of the code sequence?

- a. 12,
- b. 11,
- c. 11,
- d. 12, 1