Last Name: Bajarani **First Name:** Ulvi **SID #:** 20539914

Due in class on Wednesday *10/23/19*

1. (8 points) For each of the following pairs, which represents a class and which represents an object of that class?
   a. Celebrity **Class**, Britney Spears **Object**
   b. Mickey Mouse **Object**, Rodent **Class**
   c. Author **Class**, William Shakespeare **Object**
   d. Sport **Class**, Baseball **Object**

2. (8 points) Consider the following list of nouns and noun phrases:

address	make	cars	Anthony's car	year	Porsche
BMW	service quote	sales tax	John's class	model	total estimated charges
estimated labor charges	estimated part charges	color	trim	phone number	name

   a. From the list shown above, write all that can represent names of Java class.

service quote, cars, total estimated charges

   b. From the list shown above, write all that can represent features (instance variables) of a Java class.

address, estimated labor charges, estimated part charges, sales tax, color, address, year, model, phone number, name

   c. From the list shown above, write all that can represent methods in a Java class.

make, trim

   d. From the list shown above, write all that can represent objects.

BMW, Anthony's car, John's class, Porsche

(4 points each) Multiple Choice

3. ___ This is a collection of programming statements that specify the fields and methods that a particular type of object may have.
   a. class
   b. method
   c. parameter
   d. instance

4. ___ A class is analogous to a(n) _____.
   a. house
   b. blueprint
   c. drafting table
   d. architect

(8 points each) Use the following class definition for the following questions.

```
1  public class Account
2  {
3     private double balance; // instance variable that stores the balance
4
5     // constructor
6     public Account( double initialBalance )
7     {
8        // validate that initialBalance is greater than 0.0;
9        // if it is not, balance is initialized to the default value 0.0
10       if ( initialBalance > 0.0 )
11          balance = initialBalance;
12    } // end Account constructor
13
14    // credit (add) an amount to the account
15    public void credit( double amount )
16    {
17       balance = balance + amount; // add amount to balance
18    } // end method credit
19
20    // return the account balance
21    public double getBalance()
22    {
23       return balance; // gives the value of balance to the calling method
24    } // end method getBalance
25 } // end class Account
```

For each of the following 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.]

5. What is the output of the following main method?

```
1  public static void main( String args[] )
2  {
3     Account account1 = new Account( 35.50 );
4
5     System.out.printf( "account1 balance: $%.2f\n", account1.getBalance() );
6  } // end main
```

Your answer: **account1 balance: $35.50**

6. What is the output of the following main method?

```
1  public static void main( String args[] )
2  {
3     Account account1 = new Account( -20.17 );
4
5     System.out.printf( "account1 balance: $%.2f\n", account1.getBalance() );
6  } // end main
```

Your answer: **account1 balance: $0.00**

7. What is the output of the following main method?

```
1  public static void main( String args[] )
2  {
3     Account account1 = new Account( 7.99 );
4
5     System.out.printf( "account1 balance: $%.2f\n", account1.getBalance() );
6     System.out.println( "adding -$1.14 to account1 balance" );
7
8     account1.credit( -1.14 );
9     System.out.printf( "account1 balance: $%.2f\n", account1.getBalance() );
10 } // end main
```

Your answer: **account1 balance: $7.99**
adding -$1.14 to account balance
account1 balance: $6.85

(8 points each) Use the following class definition for the following questions.

```
1  // Lab 2: GradeBook.java
2  // GradeBook class with a constructor to initialize the course name.
3
4  public class GradeBook
5  {
6     private String courseName; // course name for this GradeBook
7
8     // constructor initializes courseName with String supplied as argument
9     public GradeBook( String name )
10    {
11       courseName = name; // initializes courseName
12    } // end constructor
13
14    // method to set the course name
15    public void setCourseName( String name )
16    {
17       courseName = name; // store the course name
18    } // end method setCourseName
19
20    // method to retrieve the course name
21    public String getCourseName()
22    {
23       return courseName;
24    } // end method getCourseName
25
26    // display a welcome message to the GradeBook user
27    public void displayMessage()
28    {
29       // this statement calls getCourseName to get the
30       // name of the course this GradeBook represents
31       System.out.printf( "Welcome to the grade book for\n%s!\n",
32          getCourseName() );
33    } // end method displayMessage
34 } // end class GradeBook
```

Determine if there an error for each of the following program segments. If there is an error, circle the error in the program and write the corrected code in the space provided after each problem. If the code does not contain an error, write "no error". [NOTE. There may be more than one error in each program segment.]

8. The following code segment should create a new GradeBook object:

```
GradeBook gradeBook = Gradebook( "Introduction to Java", 25 );
```

Your answer: **GradeBook gradeBook = new Gradebook ("Introduction to Java, 25");**

9. The following code segment should call method setCourseName of object gradeBook:

```
setCourseName( gradeBook, "Advanced Java" )
```

Your answer: **gradeBook.setCourseName("Advanced Java");**

10. The following code segment should ask the user to input a course name. That should then be set as the course name of your grade book.

```
Scanner input = new Scanner( System.in );

System.out.println( "Please enter the course name:" );
inputName = Scanner.readLine();

gradeBook.setCourseName();
```

Your answer:

Scanner input = new Scanner(System.in);

System.out.println("Please enter the course name:");
inputName = Scanner.nextLine();

gradeBook.setCourseName(inputName);

11. The following code segment should output the current course name of object gradeBook:

```
System.out.printf( "The grade book's course name is: \n", gradeBook.courseName );
```

Your answer: **System.out.printf("The grade book's course name is: \n", gradeBook.getCourseName());**

(4 points each) Multiple Choice

12. ___ An object is a(n) _____.
    a. blueprint
    b. primitive data type
    c. variable
    d. instance of a class

13. ___ This is a class member that holds data.
    a. method
    b. instance
    c. field
    d. constructor

14. ___ This key word causes an object to be created in memory.
    a. create
    b. new
    c. object
    d. construct

15. ___ This is a method that is automatically called when an instance of a class is created.
    a. accessor
    b. constructor
    c. void
    d. mutator

16. ___ This is automatically provided for a class if you do not write one yourself.
    a. accessor method
    b. default instance
    c. default constructor
    d. variable declaration