



CSE 1322 Lecture Test 2B Cover Sheet

Spring 2020

In taking this test you affirm that you have neither given nor received inappropriate help and that the answers you submit are wholly your own.

Print your Name, ID# and NetId on each page.

- 1) THERE ARE SIX (6) AND AN EXTRA CREDIT QUESTIONS ON THIS TEST. CHECK EACH PAGE TO MAKE SURE YOU HAVE ALL QUESTIONS!**
- 2) You have 45 minutes to complete the exam
- 3) You cannot use any book, notes, electronic devices, calculator, smart watch, ear phone, etc.**
- 4) Your code must be exact source code (include all required symbols, syntax, and indentation). It should be written to where a compiler would allow that code to run without any changes from the reader.
- 5) You are not allowed any electronic devices that can be used to look up or store answers.
- 6) All answers are to be your own, without the assistance of others
- 7) Partial credit will be given where appropriate

Student Name (Please Write Clearly): _____

Student KSU ID# _____

Student NetId (Please Write Clearly): _____

Student Signature: _____ Date: _____

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- 1) [20 points] Using your choice of C# or Java (**NOT in Pseudocode**), (i) write an abstract class **Person** that class contains at least these two attributes: name (String type), isRetired (Boolean type) and (ii) an abstract method Activity() that will have two arguments to assign a person object's name and retirement status values. (iii) Then write a concrete class **Teacher** that inherits the Person class and (iv) implements the abstract method that displays its name and retirement status. You don't need to include the main() method but make sure that you fulfill the all four requirements.

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- 2) [15 points] Using your choice of C# or Java (**NOT in Pseudocode**), (i) write an interface **IMammal**. (ii) The interface contains a method Type(). (iii) Then write a concrete class **Human** that inherits the interface and (iv) completes the Type() method with at least one PRINT statement, with whatever you like to display. You don't need to include the main() method but make sure that you fulfill the all four requirements.

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- 3) [15 points] Using the previous Person, Teacher, IMammal, Human, and Object classes / interface, assume that there is a main() method in a MainClass that contains the following expressions. Here Object is the built in class defined in the language Java. In C# it is Object or object. With the information given here, which of the five (5) statements (A thru J) are **incorrect (False)?**

Choice 1

Choice 2

Choice 3

Choice 4

Choice 5

```
public class MainClass {  
    public static void main(String[] args) {  
  
        /* A) */      Teacher  t1 = new Teacher();  
        /* B) */      Teacher  t2 = new Person();  
        /* C) */      Teacher  t3 = new Object();  
        /* D) */      Teacher  m2 = new Human();  
        /* E) */      Person   p1 = new Person();  
        /* F) */      Person   p2 = new Teacher();  
        /* G) */      Human    h1 = new Human();  
        /* H) */      Human    h2 = new IMammal();  
        /* I) */      Human    h3 = new Object();  
        /* J) */      Object   o2 = new Human();  
  
    } // End of main()  
  
} // End of the MainClass
```

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- 4) [20 pts] Write the output in **either Java or C# perspective** of the following string operations, assuming that the PRINT() method is a function that prints to the screen. Please note that there is no difference between “String” and “string” in C#.

String oop = "Procedure-Oriented Programming ";

a) PRINT(oop.substring(2, 15));

b) String S = "33";

PRINT(3 + 3 + S + 3 + 3);

c) String river ="Amazon River";

PRINT(river.substring(2, river.length() - 1));

d) PRINT(river.substring(2));

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- 5) [15 pts] In GUI programming, what are the Event and EventHandler classes? What are they used for? Explain with an example of each type.

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- 6) [15 pts] With your knowledge of object-oriented programming select any FIVE (5) statements (A thru J) that are **Incorrect (False)**

Choice 1

Choice 2

Choice 3

Choice 4

Choice 5

- A) A constructor may have a return type or return statement.
- B) A non-static method can invoke (call) a static method
- C) An abstract class can be instantiated to create objects of that class
- D) An interface can be instantiated to create objects
- E) All methods in an Abstract class are abstract by default.
- F) Having multiple constructors in a class is an example of method overloading.
- G) An Abstract method may provide an implementation.
- H) When a class *implements* an interface, the class must implement all of the methods in the interface.
- I) A concrete class can implement one Abstract class and multiple Interfaces.
- J) An abstract class may not contain any abstract method at all.

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7) [2 points] **Extra Credit Question [Circle only one]:**

**Inheritance is a function / class / data type /
 process / technique.**