

# Final (Part C)

Started: Dec 14 at 11:24pm

## Quiz Instructions

This exam part has 20 questions, worth 2.5 points each, with a 30 minute total time limit.

The exam is **individual** only, and **closed** to ALL resources. You may NOT use any books, notes, course materials, nor any other resources (whether from the Internet or otherwise).

By submitting your answers, you agree and consent to the following:

**“I PLEDGE THAT THIS ASSIGNMENT HAS BEEN COMPLETED  
IN COMPLIANCE WITH THE GRADUATE HONOR CODE  
AND THAT I HAVE NEITHER GIVEN NOR RECEIVED  
ANY UNAUTHORIZED AID ON THIS ASSIGNMENT.”**

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### Question 1

2.5 pts

The access specifier in the declaration of instance variables should almost always be

\_\_\_\_\_ .

- ☐ protected
- ☒ private
- ☐ static
- ☐ public

### Question 2

2.5 pts

When a button component is pushed then released in a GUI application, what kind of event is generated by the button?

- ☐ ChangeEvent
- ☐ MouseEvent
- ☒ ActionEvent

☐ ItemEvent

**Question 3****2.5 pts**

Which of the following operations is least efficient in a Java LinkedList?

- ☐ Adding an element in a position that has already been located
- ☒ Locating the position of an element within the list
- ☐ Removing an element when the element's position has already been located
- ☐ Adding an element at the beginning of the list

**Question 4****2.5 pts**

Which of these Java collection classes allow you to specify their generics?

- I. HashMap
- II. LinkedList
- III. ArrayList

- ☐ I and II only
- ☐ II and III only
- ☒ I, II and III
- ☐ I and III only

**Question 5****2.5 pts**

Consider the following code:

```
String myString = "Hello";  
String yourString = myString;
```

```
yourString = yourString.toLowerCase();
```

What is the value of myString after this code finishes?

- ☐ "hello"
- ☐ null
- ☒ "Hello"
- ☐ "" (an empty string)

### Question 6

2.5 pts

In an ArrayList of size n, what is the worst-case-scenario maximum number of elements that need to be moved when a new element is inserted into some position within the list?

- ☐ 0
- ☐  $n / 2$
- ☐  $2n$
- ☒ n

### Question 7

2.5 pts

In Java, it is most widely considered a best practice is to declare all of your local variables at the beginning of your method, rather than where they are first needed.

- ☐ false
- ☒ true

### Question 8

2.5 pts

Which of the following is NOT a terminal operation of a Stream pipeline?

- ☐ reduce()
- ☐ count()
- ☐ distinct()
- ☒ average()

### Question 9

2.5 pts

There are exactly eight of these types in Java; all other types are reference types.

- ☐ Static types
- ☐ Constant types
- ☒ Primitive types
- ☐ Numeric types

### Question 10

2.5 pts

Which metric tells you the percentage of lines and/or branches that were exercised by running your tests against your own code.

- ☐ Cyclomatic complexity
- ☐ Problem coverage
- ☒ Code coverage
- ☐ Test correctness

### Question 11

2.5 pts

Which of the following is true about interfaces and abstract classes?

- ☐ An interface cannot have constants whereas an abstract class can.
- ☒ An interface cannot have instance variables whereas an abstract class can.
- ☐ An interface cannot be instantiated whereas an abstract class can.
- ☐ An interface can specify static methods whereas an abstract class cannot.

## Question 12

2.5 pts

All of the following declarations compile, but which one is generally considered the best and most common form to use?

- ☐ `AbstractList<String> list = new ArrayList<>();`
- ☐ `List<String> list = new ArrayList();`
- ☐ `List<String> list = new ArrayList<>();`
- ☒ `ArrayList<String> list = new ArrayList<String>();`

## Question 13

2.5 pts

Assume that you have declared a map named `myMap` to hold `String` values associated with `Integer` keys. Which of the following statements will correctly add an association to `myMap`?

- ☒ `myMap.put(3, "apple");`

☐ `myMap.add(3, "apple");`

☐ `myMap[3] = "apple";`

☐ `myMap.push(3, "apple");`

### Question 14

2.5 pts

Another name for a non-static field of a class is:

- ☐ non-static method
- ☐ type parameter
- ☐ local variable
- ☒ instance variable

### Question 15

2.5 pts

Which special type in Java allows a programmer to define a finite number of uniquely-named values?

- ☐ static type
- ☐ immutable type
- ☒ enumeration type
- ☐ mutable type

### Question 16

2.5 pts

If we declare an array variable as final, it means that the contents of the array cannot change.

☒ true

☐ false

### Question 17

2.5 pts

Complete the following code snippet that returns a stream of Student objects, representing students who have a grade point average (GPA) of at least 3.8. Assume that studentStream is a stream of all Student objects, and that the getGpa() method returns a double representing the student's GPA.

```
Stream<Student> highHonors = studentStream_____;
```

☐ .limit(s.getGpa() >= 3.8)

☐ .filter(getGpa() >= 3.8)

☐ .filter(s -> s.getGpa() >= 3.8)

☐ .map(s -> s.getGpa() >= 3.8)

### Question 18

2.5 pts

A(n) \_\_\_\_\_ declares exactly one abstract method. It may be implemented using classic techniques or lambda expressions.

☐ anonymous inner class

☐ aggregate operation

- ☐ method reference
- ☐ functional interface

**Question 19****2.5 pts**

Which of the following statements about superclasses and subclasses is true?

- ☐ A superclass is extended by a subclass.
- ☐ A superclass inherits from a subclass.
- ☐ A superclass is larger than its subclass.
- ☐ A superclass extends a subclass.

**Question 20****2.5 pts**

Given the following declaration:

```
public class MyClass<T> {  
    private final int value;  
    public MyClass(int i) {  
        value = i;  
    }  
    // . . . more fields and methods . . .  
}
```

Consider the following line of code that calls the constructor above:

```
MyClass obj = new MyClass(5044);
```

what is the generic type parameter T in this line of code?

- ☐ There is an error in this line of code.
- ☐ int
- ☐ Object



☐ Integer

No new data to save. Last checked at 11:33pm

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