Q08. Inheritance

Due Nov 17 at 11:59pm	**Points** 20	**Questions** 20
Available until Dec 11 at 11:59pm	**Time Limit** 60 Minutes	**Allowed Attempts** 3

Instructions

Quiz #8

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Take the Quiz Again

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Attempt History

	Attempt	Time	Score
LATEST	**Attempt 1**	22 minutes	15 out of 20

⚠ Answers will be shown after your last attempt

Score for this attempt: **15** out of 20
Submitted Nov 11 at 10:26am
This attempt took 22 minutes.

Question 1   1 / 1 pts

If A "Is-A" B, what else can we say about the relationship between class A and class B?

○ Class A extends class B

○ Class A inherits from class B

○ Class A derives from class B.

○ None of the above.

⦿ All of the above.

Question 2

1 / 1 pts

What tool is used to show **inheritance** or **composition** relationships among classes.

- ⦿ a class diagram

- ○ a flow chart

- ○ an object diagram

- ○ a family tree

Question 3

1 / 1 pts

Which of the following is a <u>specialized</u> version of a class.

- ○ an ancestor

- ⦿ a subclass

- ○ a superclass

- ○ class Object

- ○ class Class

Question 4

1 / 1 pts

Which of the following statements is true?

○ Objects NEVER change the class to which they belong.

○

In some situations, a variable may be bound to DIFFERENT types of objects.

○

The behavior of any object is determined by the OBJECT'S CLASS and not by
the data type of the variable that references it.

◉ All of the above.

○ None of the above.

Question 5   1 / 1 pts

Given this start to a class definition:

public class Beta extends Alpha {
...
}

What is true about instance variables from Alpha?

○ Class Beta must redeclare all of Alpha's instance variables.

◉ They should **not** be redeclared in Beta.

○

The Beta class should redeclare only those instance variables from Alpha that
it wants.

○

Class Beta should redeclare only the private instance variables from Alpha.

○ None of the above

Question 6

1 / 1 pts

If class Fruit is the superclass of class Apple, which of the following is also true?

○ Fruit is the base class of Apple

○ Fruit is the parent class of Apple

○ Apple "Is-A" Fruit

◉ All of the above

○ None of the above

Question 7

1 / 1 pts

If a class definition does not include the keyword **extends**, which of the following is true?

○ The class has no sub class

○ The class has no super class

○ The class implicitly derives from Class.

◉ The class implicitly derives from Object.

○ None of the above

Question 8

1 / 1 pts

Which of the following things would <u>prevent</u> a method declaration in a subclass from properly <u>overriding</u> an inherited method?

   ◯   not matching the method name

   ◯   not matching the return type

   ◯

not matching the parameter "signature" (number, order and data types of parameters)

   ◯   trying to make a public method private

   ◉   All of the above

Question 9   1 / 1 pts

What is always the <u>very first</u> thing that occurs in the constructor of a derived class?

   ◯   instance variables are initialized

   ◯   the value *true* is returned

   ◉   a call to the superclass constructor is made

Question 10   1 / 1 pts

Which of the following statements creates a <u>composition</u> (or aggregation) relationship?

   ◯   public class Fun extends Hun { ... }

○ return new Fun();

○ if (myThing instanceof Point) { ... }

◉ private Widget myThing;

○ Boo Hoo

Question 11

1 / 1 pts

Which Java keyword can be used to access the super class version of an overridden method from within the sub class?

○ override

◉ super

○ new

○ this

○ extends

Question 12

1 / 1 pts

Given the following code (assume that the statements compile with NO syntax errors):

```
Red hot = new Red();
Green top = hot;
Orange ocean = new Blue();
hot = ocean;
```

What is the <u>static</u> type of 'top'?

◉ Green

◯ hot

◯ Red

◯ top

Incorrect

Question 13

0 / 1 pts

Given the following code (assume that the statements compile with NO syntax errors):

Red hot = new Red();
Green top = hot;
Orange ocean = new Blue();
hot = ocean;

What is the <u>dynamic</u> type of 'ocean' after all the statements have been executed? (Tip: draw an object diagram!)

◉ Orange

◯ hot

◯ Red

◯ Blue

Incorrect

Question 14

0 / 1 pts

Given the following code (assume that the statements compile with NO syntax errors):

Red hot = new Red();
Green top = hot;
Orange ocean = new Blue();
hot = ocean;

What is the <u>dynamic</u> type of 'hot' after all the statements have been executed? (Tip: draw an object diagram!)

⦿ Red

○ ocean

○ Blue

○ Orange

Incorrect

Question 15   0 / 1 pts

What determines which version of an <u>overridden</u> method is executed?

○ the static type of the variable that acts as the 'qualifier' in the method call

○
the dynamic type of the variable that acts as the 'qualifier' in the method call

○ the data types of the arguments of the method call

○ the name of the class where the method call is located

⦿ the name of the method

Question 16   1 / 1 pts

What determines which version of an <u>overloaded</u> method is executed?

○ the static type of the variable that acts as the 'qualifier' in the method call

○ the dynamic type of the variable that acts as the 'qualifier' in the method call

⦿ the data types of the arguments of the method call

○ the name of the class where the method call is located

○ the name of the method

Question 17   1 / 1 pts

A programmer writing code in class Point attempts to <u>override</u> the following inherited method:

public boolean equals(Object o) { ... }

but does not match the method signature exactly. Instead, the programmer uses the following method signature:

public boolean equals(Point p) { ... }

What is the result?

○ A syntax error occurs because the method signatures do not match.

○ The code compiles and works fine -- the method has been successfully overridden.

⦿ The code compiles, but the inherited method has not been overridden -- it has been overloaded instead.

○ The compiler automatically changes the method signature to match the inherited method.

○ The compiler issues a warning, but the method is successfully overridden.

Incorrect

Question 18

0 / 1 pts

Given the following class hierarchy:
Siamese "Is-A" Feline "Is-A" Mammal "Is-A" LivingThing

Which of the following is <u>true</u>?

◉ (new Mammal()) instanceof LivingThing

○ (new Feline()) instanceof LivingThing

○ (new Siamese()) instanceof LivingThing

○ All of the above

○ None of the above

Incorrect

Question 19

0 / 1 pts

A <u>type cast</u> using reference type is a promise to the compiler that the dynamic type of the expression will conform to the type specified in the cast. What happens if this promise is broken?

◉ A syntax error will occur.

○ The dynamic type will be changed to match the type specified in the cast.

○ A ClassCastException will be thrown.

○ The JRE will request a replacement type from the user.

○ The type cast will be ignored.

Question 20   1 / 1 pts

How many different classes can a sub class derive from, using the keyword **extends**?

○ A sub class can extend directly from mutliple super classes.

◉ exactly one class

○ any number of classes as long as an *import* statement is used

Quiz Score: **15** out of 20