Short Answer (4 Points)

1.) To invoke a base class's constructor, we use the ___super____ keyword.

2.) Redefining the behavior of an inherited method is known as ___overriding____.

3.) A class formally declares that it fulfills an interface with the ___implements___ keyword.

4.) Polymorphism can be accomplished in Java with ___inheritance____ and ___interfaces____.

True or False (4 Points - Please circle your answer)

5.) (True / False) - A variable cannot have an interface for a type.

Rationale: An interface cannot be instantiated, but a variable can have an interface as a type. This allows for Multiple Representation and Polymorphism, as the variable can now be used generically by the method definitions defined in the interface, regardless of what actual type it stores.

Comparable element = "A String";
// ^ Interface type ^ Instance of implementing class (String implements Comparable)

6.) (True / False) - An abstract class cannot be instantiated.

Rationale: Only concrete subclasses of an abstract class can be instantiated. (Classes that implement all of the abstract methods defined in the abstract base class.)

7.) (True / False) - The variable declared below can store references to Frog and Monkey objects, provided the classes Frog and Monkey inherit from Animal.

Animal animal;

Rationale: A variable whose type is a base class can store an object of any class that derives directly or indirectly from the base class. Therefore, if the classes Frog and Monkey extend Animal, an Animal variable can store Frog and Monkey object references.

8.) (True / False) - An interface can only have abstract methods as members.

Rationale: Interfaces can also have static final variables as members.

Short Answer (2 Points)

9.) Briefly explain when an inheritance relationship should be used between two classes.
Inheritance should be used when there is an "is-a" relationship between two classes, and one class (the derived class) represents a more specific set of objects than the more general class (the base class).

Key points here: "is-a" and **general / specific** relationship.