

## Reading Assignment Answers

1. What are the advantages of Polymorphism?

- It promotes code reusability and maintainability.
- It allows one interface to be used for a general class of actions.
- Enhances flexibility and scalability of the code.
- Makes it easier to extend and update the code without breaking existing functionality.

2. How is Inheritance useful to achieve Polymorphism in Java?

- Inheritance allows a subclass to inherit methods and properties from a superclass.
- Through method overriding, polymorphism allows a subclass to provide a specific implementation of a method already defined in its superclass.
- This enables dynamic method dispatch, where the method call is resolved at runtime depending on the object type.

3. What are the differences between Polymorphism and Inheritance in Java?

- Inheritance is a mechanism to acquire properties and behaviors from a parent class, while polymorphism allows those behaviors to be used in multiple forms.
- Inheritance defines a hierarchy (is-a relationship), whereas polymorphism defines how the methods behave differently based on the object.
- Inheritance is about code reusability, polymorphism is about interface and flexibility.