

Department of Computer Science and Engineering

Object Oriented Programming Through Java (25CS303)

Worksheet

UNIT-2: CLASSES, INHERITANCE, POLYMORPHISM

A. Multiple Choice Questions

1. Which keyword is used to allocate memory for an object dynamically in Java?

- A) malloc
- B) alloc
- C) new
- D) create

Answer: C

2. Which special method is automatically invoked when an instance of a class is created?

- A) static method
- B) Constructor
- C) Finalizer
- D) Main method

Answer: B

3. The automatic removal of unused objects from memory in Java is called:

- A) Memory Leak
- B) De-allocation
- C) Garbage Collection
- D) Object Destruction

Answer: C

4. Which keyword refers to the current instance of a class inside a method or constructor?

- A) super
- B) this
- C) parent
- D) static

Answer: B

5. Which keyword is used to extend a class in Java for inheritance?

- A) implements
- B) extends
- C) inherits
- D) using

Answer: B

6. Which class in java.lang is the root superclass of all classes in Java?

- A) Class
- B) Object
- C) System
- D) Root

Answer: B

7. What happens when a method in a child class has the exact same name, return type, and signature as a method in its parent class? A) Method Overloading

- B) Method Overriding
- C) Constructor Overloading
- D) Compilation Error

Answer: B

8. Which keyword is used to prevent a class from being inherited or a method from being overridden?

- A) static
- B) abstract

C) final

D) super

Answer: C

9. Which class creates immutable string objects in Java?

A) StringBuffer

B) StringBuilder

C) String

D) StringTokenizer

Answer: C

10. Which class is used to break a string into smaller tokens based on delimiters?

A) String

B) StringBuffer

C) StringTokenizer

D) CharArray

Answer: C

11. Which keyword is used to access members of a superclass from a subclass?

A) this

B) super

C) parent

D) base

Answer: B

12. An abstract class cannot be:

A) Extended

B) Instantiated

C) Inherited

D) Declared

Answer: B

13. Method Overloading is an example of:

- A) Compile-time Polymorphism
- B) Run-time Polymorphism
- C) Dynamic Binding
- D) Late Binding

Answer: A

14. Method Overriding is an example of:

- A) Static Binding
- B) Compile-time Polymorphism
- C) Run-time Polymorphism
- D) Early Binding

Answer: C

15. What are the inputs passed to the main method from the command line stored in?

- A) Object[] array
- B) int[] array
- C) String[] array
- D) char[] array

Answer: C

B. Fill in the Blanks

1. A **class** is a logical blueprint, whereas an **object** is a physical instance of that class.
2. A constructor that takes no parameters is called a **default** constructor.
3. The **static** keyword allows members to belong to the class itself rather than individual instances.
4. Unused objects are automatically cleared from memory by Java's **Garbage Collector**.
5. Values passed to a Java program during execution through the terminal are known as **command-line arguments**.
6. The **this** keyword is used to resolve name ambiguity between instance variables and local variables.
7. Unlike the String class, **the StringBuffer** class creates mutable string sequences.

8. Multiple methods having the same name but different parameter lists within the same class is known as **method overloading**.
9. The keyword used to invoke a superclass constructor from a subclass constructor is **super**.
10. A class declared with the **abstract** keyword cannot be instantiated using the new operator.
11. Java does not support **multiple** inheritance using classes to avoid ambiguity.
12. A method declared as **final** cannot be overridden in a subclass.
13. Static variables are initialized when the class is loaded into memory, using **static** memory allocation.
14. A class defined inside another class is referred to as a **nested** class (or inner class).
15. The StringTokenizer class is present in the **java.util** package.