Assignment 27

Q.1] What is mean by Object Class?

It is the parent class of all java classes

It provides common methods like equals(), hashCode(), toString() & clone()

All classes in java implicitly inherit from the object class

Q2] Explain Mark & sweep algorithm of Gargage collection?

Mark Phase: Identifies all reachable (active) objects starting from root references

Sweep Phase: Remove unreferenced objects, freeing the memory

It helps in automatic memory management by cleaning unused objects

Q3] What are the types of methods in which we can use this keyword

Constructor: to call another constructor in the same class

Instance method: refers to the current object

Method Parameter: To avoid naming conflicts

Return Statement: Returns the current object.

Q4] Explain concept of finalize() method

The finalize() method is called by the garbage collector before an object is removed from memory.

It allows the object to perform cleanup operations

Ex:- protected void finalized() throws Throwable{}

Q5] How can we call the Garbage Collector explicitly in java?

By using System.gc() or Runtime.getRuntime().gc()

It requests the JVM to run the garbage collector but it is not guranteed.

Q6] Difference b/w finalize() &in Java & destructor in C++?

Aspect	finalize	Destructor
Invocation	Called by garbage collector	Called explicitly or automatically
Usage	For cleanup before garbage collection	Frees memory when the object goes out of scope
Syntax	protected void finalize()	~Class name ()
Multiple Calls	May be called multiple times	Called only once.

Q7] How to display the hashcode of any object in Java

using hashcode() method

Ex Object obj = new Object();
sout (obj. hashCode());

Q8] What is the alternative for copy constructor in java?

Cloning: Creates an exact copy of an object

Use clone() method by implementing Cloneable interface

Ex:- MyClass obj1 = new MyClass();
     MyClass obj2 = (MyClass)obj1.clone();

Q9] What is the use of import statement in java

It allows access to classes from other packages

Avoids writing fully qualified names

Ex: import java.util.Scanner;

Q10] What is difference b/w static block & constructor?

Aspect	Static block	Constructor
Execution time	Runs once when the class is loaded	Runs every time an object is created
Purpose	Initializes static variables	Initializes instance variables
Syntax	static{}	ClassName(){}
Usecase	For class level initialization	For object level initialization