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| **SESSION** | **APRIL 2025** |
| **PROGRAM** | **MASTER OF COMPUTER APPLICATIONS (MCA)** |
| **SEMESTER** | **II** |
| **COURSE CODE & NAME** | **DCA6207 OBJECT ORIENTED PROGRAMMING USING JAVA** |
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**Set-I**

**Q1. Explain the features of Java.**

**Ans 1.**

**Java**

Java is a high-level, class-based, object-oriented programming language developed by Sun Microsystems in the mid-1990s. It is designed to be platform-independent and easy to use. Java follows the principle of "Write Once, Run Anywhere," which means code written in Java can run on any device equipped with a Java Virtual Machine (JVM).

**Object-Oriented Programming (OOP)**

Java is built entirely on the object-oriented paradigm. This means it supports core concepts such

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**Q2. What are the different types of constructors in Java? Explain each type with code examples.**

**Ans 2.**

**Constructors in Java**

A constructor in Java is a special method used to initialize objects. It has the same name as the class and does not have a return type. Constructors are invoked when an object of a class is created. They are essential for setting up initial values or executing code during object creation.

**Default Constructor**

A default constructor is provided by the compiler if no constructor is explicitly defined. It takes no arguments and assigns default values to the object.

**Example:**

class Student {

**Q3. What are the different types of control statements? 5+5**

**Write a Java program to find the sum of 1+3+5+…. for 10 terms in the series.**

**Ans 3.**

**Control Statements in Java**

Control statements are used to define the flow of execution in a Java program. They allow the program to make decisions, repeat tasks, and jump between different sections of code. These include decision-making statements, loop statements, and jump statements.

**Decision-Making Statements**

Java provides if, if-else, nested if, if-else-if, and switch statements for decision-making. These

logic to compute a series sum.

**Set-II**

**Q4. How Do You Implement Inheritance in Java? What Are the Rules for Overriding a Method in Java?**

**Ans 4.**

**Inheritance in Java**

Inheritance is a key feature of object-oriented programming that allows one class to acquire the properties and behaviors (methods and variables) of another class. In Java, inheritance promotes code reuse and supports hierarchical classification. The class that is inherited from is known as the **superclass** or **parent class**, while the class that inherits is called the **subclass** or **child class**.

**Syntax and Implementation of Inheritance**

**Q5. What Are the Differences Between an Interface and an Abstract Class? What Is the Difference Between Errors and Exceptions?**

**Ans 5.**

**Interfaces and Abstract Classes**

In Java, both interfaces and abstract classes are used to achieve abstraction, but they have different purposes and characteristics. An abstract class is a class that cannot be instantiated and may contain abstract methods (methods without a body) and non-abstract methods (with implementation). An interface, on the other hand, is a contract that defines a set of abstract

**Q6. What are the different methods under DataInputStream and DataOutputStream?**

**Ans 6.**

**DataInputStream and DataOutputStream**

In Java, DataInputStream and DataOutputStream are classes provided in the java.io package. They are used for reading and writing primitive data types in a machine-independent way. These streams allow reading and writing of data types like int, float, double, char, boolean, etc., making them suitable for binary data processing.

**Working of DataInputStream**

DataInputStream is used to read primitive Java data types from an underlying input stream. It is