Assignment – 01

1. State Various Features Of Java Programming Language.

The Major Features In Java Are:

i. Simple And Easy To Learn: It Is Easy To Learn Because It Comprises The Same Syntax As C And C++. It Holds Automatic Garbage Collection Features.

ii. Object – Oriented Programming: Almost Everything Written In Java Is Object And Class, Making It A True Object-Oriented Programming Language.

iii. Platform Independence: Unlike Other Languages, Java Is Not Limited To Any Specific Machine And Dependent On Other Factors To Run.

iv. Automatic Memory Management: It Is A Crucial Feature Of Java.

v. Security: Java is known for Its Security. With It You Can Create Virus-Free Systems.

2. State Various Fundamental Characteristics Of Oops

There are various fundamental characteristics of oops

i. Class and object
ii. Polymorphism
iii. Inheritance
iv. Abstraction
v. Encapsulation
vi. Aggression
vii. Association

3. Write A Program To Add 2 Numbers (Use Command Line Input)

```
public class Add
{
    public static void main (String args [] )
    {
            If ( args.length<2)
            {
                    System.out.println(“ Please enter two no “);
                    return;
            }
            int num1 = Integer.parseInt(args[0]);
            int num2 = Integer.parseInt (args[1]);

            int sum = num1+num2;
            System.out.println(“Sum  = “ +sum);
    }
 }
```

4. Write A Program To Find Maximum Using Command Line Argument (For Any No. Of Input)

```
public class Maximum
{
public static void main (String args [ ] )
{
        int max = Integer.parseInt(args[0]);
        for(int i=1; i<args.length;i++)
        {
                int number = Integer.parseInt (args[i]);
                If ( number>max)
                {
                        Max=number;
                }
        }
        System.out.println("Maximim  = " +max);
}
}
```

5. Write a short note on JVM

JVM stands for Java virtual machine. it is a crucial component of the Java runtime environment. responsible for executing Java byte code. it enables a computer to run Java programs as well as programs written in other languages that are also compiled to Java byte code. the JVM is virtual because it is generally implemented in software on top of a real hardware platform and Operating System.

6. How does Java achieve platform independence

Java archives platform independence through the following mechanism

i. Byte code: Java source code is compiled into platform independent byte code rather than native machine code.

ii. Java virtual machine: JVM serves as an abstraction layer between Java byte code and the underlying hardware and operating system

iii. Standard libraries (Java API): Java provides a rich set of standard libraries that abstract aware platform specific details.

iv. Write once run anywhere: the Java Philosophy of right once run anywhere emphasizes the idea that Java code written on one platform with a compatible JVM .

7. Mention 5 stage of Java program .

i. Writing the code
ii. Compiling the code
iii. Coding and verification
iv. Execution
v. Garbage collection and termination

8. List a few area of application of oops technology

Oops technology finds applications across various domains due to its flexibility modularity and code reusability. Here are a few areas where oops is commonly used

i. Software development
ii. Graphical user interface development
iii. Wave development
iv. Game development
v. Database system
vi. Mobile app development

9. State the difference between oops and procedural approach

S. N.	Procedural Programming	Object-Oriented Programming
1.	Program is divided into a small parts called function	Program is divided into a small parts called object
2.	Follows a top down approach	Follows a bottom up approach
3.	There is no access specified in procedural programming	It had access specified like private public protected
4.	It is less secure	It is more secure
5.	In procedural programming overloading is not possible	Overloading is possible in object oriented programming
6.	Does not provide data hiding	Provides the data hiding

10. Write A Program To Add 2 Numbers Using OOP approach

```
public class Add {
    private double num1;
    private double num2;
    public Add(double num1,double num2){
            this.num1=num1;
            this.num2=num2;
    }
    Public double add(){
            Return num1+num2;
            }
    public static void main (String args [] )
    {
            double num1=6.5;
            doube num2=10.8;
     Add numbers = new Add( num 1 ,
                                num2);
    double sum = numbers.add();
    System.out.println("Sum  = " +sum);
        }
    }
```