1. What is object-oriented programming ? what are the advantage of OOP ? 8

Ans: Object oriented programming or OOP refers to language that use objects in programming , they use object as a primary source to implement what is happen in the code . like inheritance, hiding, polymorphism etc.. in programming. The main aim of OOP is to bind together the data and the functions that operate on them so that no other part of the code can access this data except that function .

Advantage of OOP :-

* A real-world idea can be demonstrated, as everything in OOP is treated as an object.
* As we use the concept of encapsulation, programs are easier to test and maintain.
* Faster development of code is done as we develop classes parallel instead of sequentially.
* OOP provides greater security due to data abstraction. The outside world cannot access the hidden data.
* Reusability can be achieved by using classes that have been already written.

1. Define : -
2. Abstraction :- Data Abstraction is the property by virtue of which only the essential details are displayed to the user. Data Abstraction may also be defined as the process of identifying only the required characteristics of an object ignoring the irrelevant details.
3. Polymorphism :- “Poly ” means ‘many’ and “morphism” means ‘from’ polymorphism means many from . polymorphism is a greek word which meaning is same object having different behavior .For example, an operation may exhibit different behavior in different instances. The beheviour depends on the types of data used in the operation.
4. JVM :- A **Java virtual machine** (**JVM**) is a [virtual machine](https://en.wikipedia.org/wiki/Virtual_machine) that enables a computer to run [Java](https://en.wikipedia.org/wiki/Java_(software_platform)) programs as well as programs written in [other languages](https://en.wikipedia.org/wiki/List_of_JVM_languages) that are also compiled to [Java bytecode](https://en.wikipedia.org/wiki/Java_bytecode). The JVM is detailed by a [specification](https://en.wikipedia.org/wiki/Specification_(technical_standard)) that formally describes what is required in a JVM implementation.
5. Describe the basic features of Java programming. Distinguish between Java and C language. 6

#### Ans : The basic feature of java programming :

* Simple and Familiar : Its coding style is very clean and easy to understand.
* Compiled and Interpreted :
* Platform independent
* Portable : Java is “portable” refers to the SE (Standard Edition) version.
* Object –Oriented
* Robust : Java is robust as it is capable of **handling run-time errors.**
* **Secure**
* **Distributed :** Java is distributed because it encourages users to create distributed applications.
* High performance
* Dynamic and Extensible

**Distinguish between Java and C language.**

* Java does not include the C unique statement keywords sizeof and typedef .
* Java does not contain the data types struct and union
* Java does not define the type modifiers keywords auto, extern, register, signed an unsigned Java does not support an explicit pointer type.
* Java does not have preprocessor and therefore we cannot use #define, #include and #ifdef statements.
* Java adds new operators such as instanceof and >>>.
* Java adds labeled break and continue statements .
* Java adds many features required for OOP.

#### Explain different data types available in Java with examples.

Answer : - The type of data is known as datatype. Java uses various kinds of data types.

However the data types are mainly of two categories:

1. **Primitive Data Types-** Java primitive data types are the ones which are predefined by the programming language which in this case is Java. Without primitive data types it would be impossible to frame programs . for Example - int,float etc.

**There are two types of primitive data type .** i) Numeric (ii) Non numeric

1. **Numeric like integer and float . integer : it** Integer types can hold whole numbers such as 123, -96 and 5678. Java supports four types of integer viz. byte, short, int and long .

**Float -** Floating point types can hold numbers containing fractional parts such as 27.59 and -1.37. there are two kinds of floating point storage in java viz. float and double.

1. **Non Numeric – Like** character and Boolean . Character- char as the name suggests is useful for storing single value characters. Example- char a=’D’;  
   Boolean - boolean is a special datatype which can have only two values ‘true’ and ‘false’.
2. **Non-Primitive Data Types-** These data types are special types of data which are user defined. They are primarily classes, arrays, strings or interfaces.

#### Explain Integer and floating-point data types in JAVA with example ? 8

#### Ans: Integer : It is a value that has no fractional part. In other words, integers are similar to the set of whole numbers but add in the negative numbers as well. So, it is both positive and negative non-decimal numbers. E.g - 123, -96 and 5678

#### Floating-Point : A floating point number, is a positive or negative whole number with a decimal point. For example, 5.5, 0.25, and -103.342.