1. What is OOP? List OOP concepts.

:- OOP stands for Object-Oriented Programming. Procedural programming is about writing procedures or functions that perform operations on the data, while object-oriented programming is about creating objects that contain both data and functions.

There are some basic concepts that act as the building blocks of OOPs i.e.

1. Class
2. Objects
3. Encapsulation
4. Abstraction
5. Polymorphism
6. Inheritance

1. Class

The building block of C++ that leads to Object-Oriented programming is a Class. It is a user-defined data type, which holds its own data members and member functions, which can be accessed and used by creating an instance of that class. A class is like a blueprint for an object.

2. Object

An Object is an identifiable entity with some characteristics and behavior. An Object is an instance of a Class. When a class is defined, no memory is allocated but when it is instantiated (i.e. an object is created) memory is allocated.

3. Encapsulation

In C++, encapsulation involves combining similar data and functions into a single unit called a class. By encapsulating these functions and data, we protect that data from change. This concept is also known as data or information hiding.

4. Abstraction

An abstract class in C++ is one that has at least one pure virtual function by definition. In other words, a function that has no definition. The abstract class's descendants must define the pure virtual function; otherwise, the subclass would become an abstract class in its own right

5.Polymorphism

Polymorphism means "many forms", and it occurs when we have many classes that are related to each other by inheritance.

6.Inheritance

In C++, it is possible to inherit attributes and methods from one class to another. We group the "inheritance concept" into two categories:

- **derived class** (child) - the class that inherits from another class
- **base class** (parent) - the class being inherited from

2. What is the difference between OOP and POP?

OOP (Object Oriented Programming)	POP (Procedural Oriented Programming)
Object oriented.	Structure oriented
Program is divided into objects.	Program is divided into functions.
Bottom-up approach.	Top-down approach.
Inheritance property is used.	Inheritance is not allowed.
It uses access specifier.	It doesn't use access specifier.
Encapsulation is used to hide the data.	No data hiding.
Concept of virtual function.	No virtual function.

Object functions are linked through message passing.	Parts of program are linked through parameter passing.
Adding new data and functions is easy	Expanding new data and functions is not easy.
The existing code can be reused.	No code reusability.
use for solving big problems.	Not suitable for solving big problems.
Ex.c++,java	Ex.c,pascal