ASSIGNMENT 1 MODULE 3 :- BASICS OF OOP

Q1. WAP to print “Hello World” using C++.

A1. #include <iostream>

using namespace std;

int main()

cout << "Hello World" << endl;

return 0;

}

Q2. What is OOP? List OOP concepts.

A2. Object-oriented programming aims to implement real-world entities 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

**Summary of Key OOP Concepts:**

1. **Class** - A blueprint for creating objects.
2. **Object** - An instance of a class.
3. **Encapsulation** - Hiding implementation details and restricting access.
4. **Abstraction** - Simplifying complex systems by hiding unnecessary details.
5. **Inheritance** - Creating new classes based on existing classes.
6. **Polymorphism** - Allowing objects of different classes to be treated as objects of a common superclass and enabling method behavior to vary.
7. **Message Passing** - Communicating between objects through method calls.

Q3. What is the difference between OOP and POP ?

A3. **Key Differences Summarized:**

1. **Data and Function Organization:**
   * **OOP**: Data and functions are bundled into objects and classes. Data is encapsulated, and functions (methods) are bound to those objects.
   * **POP**: Functions are independent and operate on global data, which can be accessed or modified by any function in the program.
2. **Code Reusability:**
   * **OOP**: High reusability through inheritance and polymorphism.
   * **POP**: Reusability is limited to function calls and global variables.
3. **Focus:**
   * **OOP**: Focuses on **objects** and **data** (abstraction, encapsulation).
   * **POP**: Focuses on **procedures** and **functions** (step-by-step instructions).
4. **Modularity and Maintenance:**
   * **OOP**: Easier to manage and maintain due to modular objects, classes, and inheritance.
   * **POP**: More difficult to maintain because functions tend to be isolated and may need to operate on global data.