UNIT -III **Object Oriented Programming with C++** CHAPTER **13**

Introduction to Object Oriented Programming with Techniques

1.What is paradigm ?Mention the different types of paradigm?

- Paradigm means **organizing principle** of a program.
- It is an **approach** to programming
- They are **Procedural** programming, **Modular** Programming and **Object Oriented** Programming

2.How is modular programming different from procedural programming paradigm?

Modular programming	Procedural programming
Emphasis on **algorithm** rather than **data**	This emphasis on **doing things.**
Programs are divided into **individual modules**	Programs are organized into **subroutines** or **sub programs**
Each modules are **independent** and have their own **local** data	All data items are **global**
Modules can work with its **own data** Ex.**Pascal and C**	**Difficult** to maintain and enhance the program code . Ex.**FORTRAN** and **COBOL**.

3.Write the differences between Object Oriented Programming and procedural programming

Modular programming	Object Oriented Programming
Emphasis on **algorithm** rather than **data**	Emphasizes on **data** rather than **algorithm**
Programs are divided into **individual modules**	**Data** and its associated **operations** are grouped in to **single unit**
Each modules are **independent** and have their own local data	**Data abstraction** is introduced
Modules can work with its **own data**.	Relationships can be created between **similar**
Ex.**Pascal and C**	Ex.**C++, Java, VB.Net, Python** etc.

4.What are the Main Features of Object Oriented Programming? Advantages of oop.

- Data Abstraction
- Encapsulation
- Modularity
- Inheritance
- Polymorphism

5.How is encapsulation and abstraction are interrelated? Or
6.Define encapsulation.

- The mechanism by which the **data** and **functions** are **bound together** into a **single unit** is known as Encapsulation
- It can also be called **data binding.**

7.Define Abstraction

- Abstraction refers to showing **only the essential** features without revealing background details

8.Define Data Hiding or information Hiding.

- The members and functions declared under **private** are not accessible by **members outside** the class, this is referred to **data hiding.**

9.Differentiate classes and objects.

Class	object
Class is a way to **bind** the **data** and its associated **functions** together.	Represents **data** and its associated **function** together into **a single unit.**
User defined data type	They are **instances** of Class (**class variable**)
Class represents a **group of similar objects**	Basically an **object** is created **from a class**.

10.What is polymorphism?

- Polymorphism is the ability of a **message** or **function** to be displayed in **more than one form**.

11.What are the Advantages of OOP

Re-usability:
Code can be use any number of times.
Redundancy:
Inheritance is the good feature for data redundancy.
Easy Maintenance:
It is easy to maintain and modify existing code
Security:
Data hiding and **abstraction** are used to give the security of data.

12.Write the disadvantages of OOP.

Size:

- Object Oriented Programs are much larger than other programs.

Effort:

- Object Oriented Programs require a lot of work to create.

Speed:

- Object Oriented Programs are slower than other programs, because of their size.

13.What is Modularity ?

- Programs are **divided into individual modules** is called Modularity.

14.Define Software re-use:

- A program can be composed from **existing** and **new modules**