Solved Question Paper

June 2008

1.a)Explain the concept of information hiding. How it is different from data encapsulation ? (5marks)

Information hiding is also known as data hiding. Information hiding is one of the most important principles of OOP. Information hiding is the process by which only relevant information is shown to the user and hiding all other data . Internal data should not go out directly that is outside person should not be able to access internal data. Information hiding is a powerful programming technique because it reduces complexity. It is achieved by using private modifier. The main advantage of data hiding is security.

A class is designed such that its data (attributes) can be accessed only by its class methods and insulated from direct outside access. This process of insulating an object's data is called data hiding or information hiding.

Encapsulation is the process of binding both attributes and methods together within a class. Through encapsulation, the internal details of a class can be hidden from outside. It permits the elements of the class to be accessed from outside only through the interface provided by the class.

Encapsulation	Data hiding
deals with hiding the **complexity** of a program.	deals with the **security** of data in a program.
data can be **public or private**	data must be **private** only.

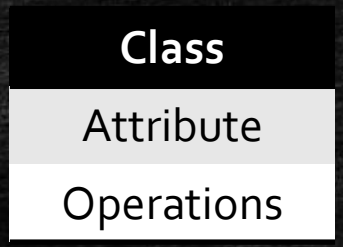
1.c)Give brief description of characteristics of object oriented modelling. 5mark

Characteristics of object oriented modelling are :

- Classes and Objects
- Abstraction
- Encapsulation
- Polymorphism
- Generalization and Inheritance
- Links and Association

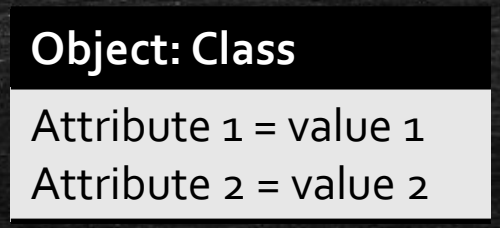
Classes and Objects :

- A class is a collection of things, or concepts that have the same characteristics. Each of these things or concepts is called an object.
- Characteristics shared by a class are attributes and operations. Attributes are named slots for data values that belong to the class. Operations represent services that an object can request to affect the behaviour of the object or the system itself.
- The notation for a class is a box with three sections. The top section contains the name of the class in boldface type, the middle section contains the attributes that belong to the class, and the bottom section contains the operations of the class.



Class notation

Object : Anything in this real world is considered to be an object.



Object Notation

Three differences between the notations :

- Within the top section of the class box, the name of the class to which the belongs appears after a colon. The object may have a name, which appears before the colon, or it may be anonymous, in which case nothing appears before the colon,
- The contents of the top compartment are underlined for an object.

- Each attribute defined for the given class has a specific value for each object that belongs to that class.

Abstraction : Abstraction is one of the very important concepts of object oriented systems.