**C++**

**1).What is object oriented programming?**

OOPS:

* It is a paradigm that breaks the whole problem in terms of objects.
* Data security.
* Reduce complexity and errors.
* Real life world problems.
* Bottom up approach.

Class:

* It is user defined derived datatype.
* Class is the wrapping up of the data members(member variables)& the associated member function into a single unit.
* Class is blueprint for objects(For each class can create many objects).

Eg:

class A

{private:

data variable

member function}

Object:

* An object is instance of class (i.e. a class variable)
* A basic run time entity/item of a program. Eg:Student’s record,bank account record etc.
* An object is a partition area in computer memory that keeps space for data member but space for data functions are reserved separately.(ANALOGY:EYE WATCHES BUT THEY ARE INTERPRETED IN MIND).

**2)Mention some OOPS concepts?**

Data Abstraction:

Data Hiding:

Data Encapsulation:

Inheritance:

Polymorphism:

**3)Real life example of class and object(WAP for ATM)?**

**4)How do you implement Command Line argument in C++?**

* Able to pass arguments through command line interface of OS when program execution starts.
* 1st argument = file name=exectutable file.
* 2nd argument =depends upon the requirement
* Format of main function:

void main(int argc , char \* argv[]) //counter and value

**5)What do you mean by templates?**

* Analogy: In mobile templates like, ”Call you Later”
* Recent feature of C++
* Helps in Generic Programming
* 2Types:

-Class Template(Family of classes)

-Function Template(Family of funtion)

* Class Template:

-It can be used for different different datatypes which can be passed as argument to the class.

-Also called parameterised class.

* Function Template:

-The same function can be used with different different datatype to perform same type of operation.

**6)What do you mean by static member of the class?**

* Static data member:

-static keyword used.

-Single copy of variable is created which is shared by all objects.

* Static member function:

-static keyword used

-Accessed using classname (not using object name)

-Can access only other static members.

**7)Explain “this” keyword?**

* When a member function of a class is called by the object of a class then in that case
* A pointer called “this” automatically gets created inside that member function
* And points to the current object for which this concerned member function was created.
* This pointer can be used as:
* (\*this).x
* this->x

**8)What do you mean by friend function?**

* In order to make private member of a class accessible by outsider function
* That function first of all needs to be declared as a friend function of the class.(using keyword friend).
* Friend function is declared inside class but defined outside the class.
* Inside the friend function we can access private(and protected)members using object name.
* NOTE:RARELY USED AS VIOLATES OOPS CONCEPT OF DATA HIDING.

**9)What do you mean by Virtual Function?**

NOTE:PARENT=BASE , CHILD =SUB

* When the parent and child class have same format of function
* And if we use ***a common parent class pointer*** to point to both parent and child object
* Then function call depends upon the ***type of parent class*** pointer.
* Even though a parent class pointer is pointing to child class pointer the function of the parent class gets invoked and it ***stops function overriding***.
* Declaring the function using virtual keyword ensures that
* Function call will now depend upon the ***type of object being pointed by the base class pointer*** and not on the type of base class pointer.

**10)What do you mean by Pure Virtual Function?**

* It is a “do-nothing” function
* It does not have body/function of itself
* Instead its working must be overridden by the child class.

|  |  |
| --- | --- |
| Abstact Class | Concrete class |
| * The class(at least one) which contains the pure virtual function is called the Abstract class. * The abstract class can never be used to create an object | * The child class which are inherited from this class are called Concrete class. * But it’s child class are used to create the object (& they can be pointed by the common base class pointer). |

**11)What do you mean by function overriding?**

* When the base class and sub class have the same format of the function(same name,same argument,same return type).
* Then if we try to call the function
* Then everytime the child class gets invoked
* And dominates the function of the base class.
* This process is known as function overriding.

**12)What is operator overloading?**

* Operator overloading is the process of assigning an additional task /meaning to the operator
* Without changing its actual syntax

NOTE: THESE OPERATORS CAN’T BE OVERLOADED

conditional operator (?:)

SRO ( :: )

sizeof()

member access operator(.,->,::)

**13)What is function overloading?**

* Compile time polymorphism
* Function overloading is a process of using the ***same function name*** multiple times
* But having different different argument list
* And also their bodies defined separately
* NOTE:DEPENDS ON NO & TYPE OF ARGUMENTS NOT ON RETURN TYPE.