OBJECT ORIENTED PROGRAMMING USING C++

QUESTION BANK

1. What are the Concepts of OOPs
1. Objects
2. Classes
3. Data Abstraction
4. Data Encapusulation
5. Inheritance
6. Polymorphism
7. Message Passing
8. Dynamic Binding

2. Differentiate Procedure Oriented Programming(POP) and Object Oriented Programming(OOP)
POP
1) Emphasis on non-real itrem
2) Programs are divided into functions
3) Data are sharable
4) Structured Programming
5) Top-Down Approach
OOP
1) Emphasis on real item
2) Programs are divided into Objects
3) Data are not sharable
4) Object Oriented Programming
5) Bottam-Up Arpproach

3. Define Tokens
Smallest individual unit in a program. C++ tokens are Keywords, Identifiers, Constants, Strings, Operators

4. What are the Data Types in C++
Built-in Data types
User Defined Data types
Derived Data Types

5. Write the Block Structure of C++
Include Files
Class Declaration
Member Function Defintions
Main Function Program

6. What are the Operators in C++

1. Scope Resolution Operator : :
2. Pointer-to-Pointer Member Declarator : :*
3. Pointer-to-Pointer Member Operator ->*
4. Pointer-to-Pointer Member Operator .*
5. Delete-Memory Release Operator
6. Endl-Line feed operator
7. New-Memory allocation operator
8. Setw-Memory width operator
9.

7. What is expression? What are the expressions in C++?
1. Constant Expressions
2. Integral Expressions
3. Float Expressions
4. Pointer Expressions
5. Relational Expressions
6. Logical Expressions
7. Bitwise Expressions

8. What is meant by Data Hiding?
   Data are hidden inside a class, that can not be accessed by any function outside the class. It is achived by declaring the data part as private.

9 . What is Polymorphism? What the are the types of Polymorphism.
   Polymorphism mean many forms. Types of Polymorphism are
ü Runtime Polymorphism
ü Compile time Polymorphism

10. Differentiate Constructor and Destructors.
    Constructors cannot be virtual. Destructors can be Virtual. Construtors must be declared in public. Destructors must be declared in public. Constructors has arguments. Destructors has no arguments.

11. What is function? What are the types of Function in C++?
1. Functions with Arguments and No Return Values
2. Functions with No Arguments and No Return Values
3. Functions with Arguments and Return Values

12. What are the Features of Inline Function?
1. Run Faster
2. Function Call & Return is Eliminated
3. Improves Performance

13. What are the Components of Functions?
1. Function Declaration
2. Function Parameters

3. Function Definition
4. Return Statement
5. Function Call

14. What is Default Arguments
A function with same name, Different arguments is known as Default Arguments

15. What is Function Overloading?
Overloading refers to the use of same thing for different purpose. i.e., Same
function name performs variety of different tasks. Also known as Function polymorphism.

16.What are the parameter passing in C++.
ü Pass by value
ü Pass by Address
ü Pass by reference

17. Define Class?
A class encloses both data and functions that operate on the data, into a single unit.

18. Define Object Based Language.
Object Based Language=Encapsulation + Object Identity
Object Oriented Language= Object Based Features + Inheritance + Polymorphism

19. What are the Access Specifiers in C++.
1. Public
2. Private
3. Protected

20. What is Static Variables?
Defined with in the function, static variable initialized only once. Contents of the
variables retained throughout the program.

21. Static Member Functions?
Static Function can have accessed by only static members declared in the same
class. Static member function called using the name of class instead of its objects.

22. Define Constructor.
It is a member function having name of its class. It is executed automatically when
object is created. It is used to initialize object and allocate the necessary memory.

23. Define Destructor.
It is a member function having the char ~ followed by name of its class. It is executed
automatically when object goes out of scope. A class must have only one constructor.

24. Define Constructor Overloading.

A class can have multiple constructors. This is called constructor overloading.

25. What is order of Constructor and Destructor
When more than one object is created, they are destroyed in the reverse
Chronological order. Object created must recently is the first one to be destroyed.

26. What is meant by Parameterized constructors.
Constructor that can take arguments are called parameterized constructor.

27. What is meant by Copy Constructors?
It is used to declare and initialize an object from another object
For example
Integer i2 (i1)
Define I2 and at the same time initialize it to the values of i1.

28. Define Friend Function.
Private members cannot be accessed from outside the class. To make an outside
function " Friendly" to a class, declare this function as a friend of the class.

29. What is meant by Friend Class?
We can also declare all the member function of one class the friend of another class. In
such cases , the class is called a friend class.

30. What are the Special Characteristics of Friend Function?
1. The function definition does not use friend keyword
2. It is not in the scope of the class which is declared as friend
3. It can be called like normal function without the help of any object
4. Friend function acts as a Bridge between 2 classes

31. Define Operator Overloading?

To define an additional task to an operator. Mechanism of giving such special
meanings to an operator is known as Operator Overloading.

32. What are the Operators of C++ that cannot be overloaded?
1. . , .* - class member access operator
2. :: - Scope Resolution Operaotr
3. Sizeof-Size of Operator
4. ?:- Conditional Operator
5.

33. Define Inheritance.
Creating new class from old class. (or)   Deriving a new class from old class.

34. What are types of Inheritance?
1. Single Inheritance

2. Multiple Inheritance
3. Multilevel Inheritance
4. Hybrid Inheritance
5. Hierarchical Inheritance

35. What are visibility modes of Inheritance?
1. Private
2. Public
3. Protected

Note: Private members are not inheritable, inaccessible to the objects of derived class.

36. How can you define member functions in c++?
Defined inside the classDefined outside the class

37. What is meant by Abstract Class?
It is the one that is not used to create objects. That is, abstract class is designed only to act as a base class.

38. What is meant by intermediate base class?
In multilevel inheritance, first level derived class is known as intermediate base class.

39. What is meant by Automatic Initialization of objects.
C++ provides a special member function called the constructor which enables an object to initialize itself when it is created.

40 . What is meant by Hybrid Inheritance?
2 or more types of inheritance used to derive a class. 2 or set of class acts as a base class, from which we can derive a new class.

41. What is meant by Multipath Inheritance?
Consists of multiple, multilevel and hierarchical inheritance.

42. Define Virtual Base Class.
Duplication of inherited members due to multiple paths can be avoided by making the common base class as virtual base class.

43. Define Virtual Function?
It is used to invoke exact version of the member function. Virtual functions should be defined in the public section of a class

44. How can you access the virtual functions.
Virtual functions have to be accessed through a pointer to the base class. It is not accessible directly.
What are the types of type conversion?
1. conversion from basic type to class type

2. conversion from class type to basic type
3. conversion from one class type to another

45. What is operator overloading?
The mechanism of giving such special meanings to an operator is known as operator overloading. or In c++ you can give special meanings to operators when they are used with user defined classes. This is called operator overloading.

46. Why is it necessary to overload an operator?
To define a new relation task to an operator, we must specify what it means in relation to the class to which the operator is applied. This is done with the help of a special function called operator function.
Or
It allows the developer to program using notation closer to the target domain and allow user types to look like types built into the language.
Or
The ability to tell the compiler how to perform a certain operation when its corresponding operator is used on one or more variables.

47. What is a conversion function? How it is created? Explain its syntax
The type of data to the right of an assignment operator is automatically converted to the type of the variable on the left. For e.g., the statements
int m;
float x=3.14;
m=x;
Convert x to an integer before its value is assigned t0 m. thus the fractional part is truncated.

48. When is a friend function compulsory? Give an eg.
A friend function is necessary when you an function outside the class. And to access the private members of the class or the member function and also friend class can directly access the private and protected data.

49. What is meant by pure abstract class?
A class containing pure virtual function is called pure abstract class .

50. What are the ios format functions.?
1. Width()
2. Precison()
3. Fill()
4. Setf
5. Unsef