**1. How should runtime errors be handled in C++?**

The runtime errors in C++ can be handled using exceptions. Exception are handle using the keyword try,catch and throw

**2. When should a function throw an exception?**

A function should throw an exception when it is not able to fulfil its promise.   
As soon as the function detects a problem that prevents it from fulfilling its promise, it should throw an exception.

**3. Explain Copy Constructor.**

It is a constructor which initializes it's object member variable with another object of the same class. If you don't implement a copy constructor in your class, the compiler automatically does it.

**4. When do you call copy constructors?**

Copy constructors are called in these situations :   
1. When compiler generates a temporary object.   
2. When a function returns an object of that class by value .  
3. When the object of that class is passed by value as an argument to a function .  
4. When you construct an object based on another object of the same class.

**5. When does a class need a virtual destructor?**

If your class has at least one virtual function, you should have a virtual destructor. This allows you to delete a dynamic object through a caller to a base class object. In absence of this, the wrong destructor will be invoked during deletion of the dynamic object.

**6. What is the type of “this” pointer? When does it get created?**

It is a constant pointer type. It gets created when a non-static member function of a class is called.

**7. Explain STL.**

STL stands for Standard Template Library. It is a library of container templates approved by the ANSI committee for inclusion in the standard C++ specification.

**8. Explain Stack unwinding.**

Stack unwinding is a process during exception handling when the destructor is called for all local objects between the place where the exception was thrown and where it is caught.

**9.Explain RTTI.**

RTTI - Runtime type identification   
 It lets you find the dynamic type of an object when you have only a pointer or a reference to the base type.   
 RTTI is the official way in standard C++ to discover the type of an object and to convert the type of a pointer or reference.

**10. What are the advantages of C++?**

C++ doesn't only maintains all aspects from C language, it also simplify memory management and add several features like:

* Includes a new datatype known as a class.
* Allows object oriented programming.

**What is the difference between C and C++?**

|  |  |  |
| --- | --- | --- |
| **No.** | **C** | **C++** |
| 1) | C follows the procedural style programming. | C++ is multi-paradigm. It supports both procedural and object oriented. |
| 2) | Data is less secured in C. | In C++, you can use modifiers for class members to make it inaccessible for outside users. |
| 3) | C follows the top-down approach. | C++ follows the bottom-up approach. |
| 4) | C does not support function overloading. | C++ supports function overloading. |
| 5) | In C, you can't use functions in structure. | In C++, you can use functions in structure. |
| 6) | C does not support reference variables. | C++ supports reference variables. |
| 6) | In C, scanf() and printf() are mainly used for input/output. | C++ mainly uses stream cin and cout to perform input and output operations. |