

Unit III**1. What is an exception ?**

Exception refers to unexpected condition in a program. The unusual conditions could be faults, causing an error which in turn causes the program to fail. The error handling mechanism of C++ is generally referred to as exception handling.

2. What are the types of exception ?

They are classified into synchronous and asynchronous exceptions.

Synchronous exception :

The exception which occur during program execution , due to some fault in the input data or technique that is not suitable to handle the current class of data, within the program are known as synchronous exception.

For instance errors such as out-of-range, overflow, underflow and so on.

Asynchronous exception :

The exceptions caused by events or faults unrelated to the program and beyond the control of the program are called asynchronous exception.

For instance, errors such as keyboard interrupts, hardware malfunctions, disk failure, and so on.

3. What are the blocks related to exception handling constructs ?

The blocks related to exception handling constructs are

- try
- throw
- catch

The keyword try is used to preface a block of statements. Which may generate exceptions. This block of statements is known as try block.

When an exception is detected, it is thrown using throw statement in the try block.

A catch block catches the exception thrown by the throw statement in the try block and handles it appropriately.

Syntax:

```
try
```

```
{
```

```
.....
```

```
throw exception;
```

```
}  
catch (type arg)  
{ }
```

4. What are the functions supported by C++ to handle uncaught exceptions ?

The functions supported by C++ to handle uncaught exceptions are

```
terminate ()  
set_terminate ()  
unexpected ()  
set_unexpected ()
```

5. What is a template ?

Templates support generic programming, which allows to develop reusable software components such as functions, classes etc., supporting different data types in a single framework

6. What is function template ?

The templates declared for functions are called function templates. They perform appropriate operations depending on the data type of the parameters passed to them.

7. What is a class template ?

The templates declared for classes are called function templates. They perform appropriate operations depending on the data type of the parameters passed to them.

8. What is a stream ?

Stream is a series of bytes, which act either as a source from which input data can be extracted or as a destination to which the output can be sent. The source stream provides data to the program called te input stream and the destination stream that receives data from the program is called the output stream.

9. What are the types of standard streams ?

- cin - Standard input corresponding to stdin in C
- cout – Standard output corresponding to stdout in C
- cout – Standard error output corresponding to Stderr in C • clog – A

fully buffered version of cerr.

10. How do you classify ios class ?

Istream – input stream does formatted input.

Ostream – output stream does formatted output.

Iostream – input / output stream does formatted input and output.

11. What are manipulators ?

Manipulators are special functions that are specifically designed to modify the working of a stream. They can be embedded in the I/O statements to modify the form parameters of a stream.

12. Give few ios class functions and flags ?

Function	Task performed
Width()	Specifies the required number of fields to be used while displaying the output value.
Precision ()	Specifies the number of digits to be displayed after the decimal point.
Fill ()	Specifies a character to be used to fill the unused area of a field. By default, fills blank space character.
Setf ()	Sets format flag that control the form of output display.
Unsetf ()	Clears the specified format flag.

13. What is a file ?

A file is a collection of related information defined by its creator. Commonly files represent programs (both source and object forms) and data. Files may be free-form, such as text files or may be rigidly formatted . In general, a file is a sequence of bits, bytes, lines, or records whose meaning is defined by its creator and user.

14. How many classes are used for handling files ?

ifstream – for handling input files.

ofstream – for handling output files.

fstream – for handling files on which both input and output can be performed.

15. What are the steps involved in manipulating a file ?

- Name the file on the disk
- Open the file to get the file pointer. • Process the file. (Read / Write)
- Check for errors while processing.
- Close the file after its complete usage.

16. What functions are used for manipulation of file pointers ?

- seekg () – Moves get file pointer to a specific location. • seekp () - Moves put file pointer to a specific location. • tellg () – Returns the current position of the get pointer • tellp () - Returns the current position of the put pointer

17. What do you mean by sequential access ?

A sequential file has to be accessed sequentially ; to access the particular data in the file all the preceding data items have to be read and discarded. For example a file on a tape must be accessed sequentially.

18. What do you mean by random access ?

A random file allows access to the specific data without the need for accessing its preceding data items. However, it can be accessed sequentially . For example, a file on a hard disk or floppy disk can be accessed either sequentially or randomly.