

6. INTRODUCTION TO PROGRAMMING

1. What is Pre-processor directive?

Pre processor are the compiler directive statements which direct the compiler to process the information provided before actual compilation starts. They are lines starts with # include in the program but not the part of it.

2. What is the use of header files in C++ program?

Header files contain information about functions, objects or derived data types and are available along with compiler. .

Eg. # include <iostream>

iostream give information about the object cin and cout.

3. What is the use of main() in C++ ?

The execution of C++ program begins at main () and ends within main (). All other function used in the program are called from main ().

4. What are L value and R value of variable?

A variable is associated with two values, L-value, its address and R-value, its content.

5. What is garbage value of a variable?

It is the unpredictable value assigned to a variable at the time of its declaration.

6. What is initialization and dynamic initialization of variables?

Supplying value to a variable at the time of its declaration is called variable initialization.

Eg. int x=100;

If the variable initialized during the execution of the program is known as dynamic initialization.

Eg. int i=p*n*r/100;

7. Why do const is known as access modifier?

The *const* key word is used in the variable declaration to make its access read only, ie we can't change its value

Eg. const float p=3.14;

So const is known as access modifier.

8. What is type modifier in C++?

Type modifiers are given in the variable declaration to alter the size , range and precision of the variable. Important type modifiers are signed , unsigned, long and short.

9. What are arithmetic assigned operators in C++?

arithmetic assigned operators are C++ short hands used to represent arithmetic binary operations such as +, - ,* , /.

By this method

a=a+10 ; can be written as a+=10;

Eg. a-=10; , a*=10; a/=10;

10. What is increment and decrement operators in C++?

++ is the increment operator in C++ used to incrementing the content of an integer value by one.

Eg. ++a; , a++;

-- is the decrement operator in C++ used to decrementing the content of an integer value by one.

Eg. --a; , a- -;

There are two forms of increment/decrement operators, prefix form and post fix form.

Prefix form: Here the operator is placed before the operand

Eg. int a=10;

C=++a; or c=- -a;

So the incrementation /decrementation takes first and then the assignment takes place(ie. Change and then use method)

Postfix form: Here the operator is placed after the operand

Eg. int a=10;

c=a++; or c=-a- -;

So the incrementation /decrementation done after the assignment takes place(ie. Use and then change method).

11. What is mean by precedence of operators?

It is the order of operations will carried out in C++ when different operations are used with operands.

1. () Parenthesis
2. ++, --, size of Unary operator
3. *, /, %
4. +, -
5. =, <, > etc Relational operators
6. ==, !=
7. &&
8. !!
9. ? :
10. =, += etc arithmetic assignment operator
11. , comma

12. What are the type conversion methods in C++?

If different types of numeric data are involved in an operator conversion techniques are applied (eg. 5/ 2.0). So the data type of one operand is converted in to another and is called type conversion. There are two ways

a). Implicit type conversion(Type Promotion)

It is done by C++ compiler internally. In expression where different types of operands involved, C++ convert the lower sized operand to higher sized operand . So it is known as type promotion.

Eg. int a,c;
 float b;
 a=2;
 b=5.2;
 c=a+b; Here c is promoted to float and result will be 7.2.

b). Explicit Conversion (Type casting)

Here the programmer explicitly cast a data to the desired type. Usually it is done in variables in expressions.

13. What is the use of adding comments in a program? How can we include different types of comments I a C++ program?

Comments are the lines of codes that are added in the program to describe the program. They are ignored by the compiler. Comments make the program more readable.

There are two types of comments,

- a). Single line comments: In C++ // is used to write single line comments
- b). Multiline comments : These are included within /* and */.

Previous Questions

1. What is the name files created to support C++ programs and kept in the standard library (1)
2. In C++ which among the following is NOT a rule for a valid identifier ?
 - a) The first character must be a letter or underscore(_).
 - b) White space and special characters are not allowed.
 - c) Keywords can be used as an identifier.
 - d) Upper and lower case can be treated differently. (1)
3. Memory requirement of void data type in C++ is byte(s). (1)
4. The arithmetic assignment operation $Y/=10$ is equivalent to
 - a) $Y=10$
 - b) $Y=Y+10$
 - c) $Y=Y/10$
 - d) None of these. (1)
5. Which of the following is not a C++ statement?
 - a). $x = x + 10;$
 - b). $x + = 10;$
 - c). $x + 10 = x;$
 - d). $x = 10+ x;$ (1)
6. Which header file is responsible for cout and cin objects? (1)
7. C++ program execution starts and ends within function (1)
7. How do the type modifiers effect the size and range of int and char data types ? (2)
8. Briefly explain any two expressions in C++. (2)
8. What is the output of the following C++ Statements (2)
 $x=-7 ,y=3$
 - a) add $-x$ with $-y$
 - b) x modulus y
9. If $a = 5$, $b = 7$ and $c = 3$, predict the output of the following expressions. (2)
 - a) a
 - b) $b\% a$
 - c) $(a>c) \&\& (a<b)$
 - d) a/c
10. Predict the value of 'b' in the following C++ code after execution of each code snippet.
 - a) and b) Justify your answer.
 - a) $a=5 ; b= a++ ;$
 - b) $a=5 ; b=++a ;$ (2)
11. Explain the different types of programming errors . (2)
12. Comments in a program are ignored by the compiler. Then why should we include comments?

Write the methods of writing comments in C++ Program. (2)

13. Write output of the following program?

```
#include <iostream>
using namespace std;
int main ()
{
    Int a = 10 ;
    cout<<"\n a= " << a--;
    cout<<"\n a= " << --a;
    return 0;
}
```

(2)

14. The following program finds the sum of three numbers. Modify the program to find the average. (Average should display fractional part also).

```
#include<iostream>
using namespace std;
int main ( )
{
    int x ,y , z, result;
    cout<<"Enter values f or x ,y, z" ;
    cin>>x>>y>z;
    result=x+y+z;
    cout<<"The answer is ="<<result;
    return 0;
}
```

(2)

15. Write sample statements in C++ for the cascading of input and output operators. (2)

16. Write a C++ program to print the following message.

(**Hint** : use only one cout statement).

“ SMOKING IS INJURIOUS TO HEALTH”

“ SAY GOODBYE TO DRUGS”

(2)

17. Detect and correct the errors in the following C++ code.

```
#include<iostream>
using namespace std;
int main ( )
{
    int a, b;
    cout<<" Enter two numbers: ";
    cin>>a and b;
    a + b = c;
    cout<<"Sum = "<<c;
    return 0;
}
```

(2)

18. In the following program, some lines are missing. Fill the missing lines and complete it.

```
#include<iostream.h>
.....

{

Int num1,num2,sum;

cout<<"Enter two numbers:";

.....

.....

Cout<<"Sum of numbers are ="<<sum;

} (3)
```

19. a). Consider the structure of C++ program given below and answer the following question.

```
#include<iostream>

using namespace std;

int main( )

{

    Statements;

}
```

Write the preprocessor directive statement in the code? (1)

b). Explain the header files in a program. (2)

20. Explain implicit and explicit type conversion with suitable examples. (3)

21. What are data types? Explain the fundamental data types in C++. (3)

22. What is the role of comments in a program? Explain the different ways to write comments in a C++ program. (3)

23. What is implicit type conversion? Why it is called type promotion? (3)

24. Write a C++ program to check whether the given number is Prime or Not . (5)

25. Write a C++ program to find the total and percentage of a student in Six Subjects.(5)

