Important Short Questions

Q2. Give short answers of the following questions

Q1. Who and when C++ is created?

Ans: bjarne Stroutstrup created C++ in early 1980s at Bell Laboratories.

Q2. What are the uses of C++?

Ans: C++ supports modern programming techniques. It is commonly used for developing high performance commercial software games and graphics related programs.

Q3. State the term "Computer Program"

Ans: A computer program is a set of instructions that perform a specific task when executed by a computer. It tells the computer what to do.

Q4. In which language programs are written?

Ans: Generally programs are written in English oriented high level languages such as Visual Basic, Pascal, Java, C++ etc

Q5. Define source code and object code

Ans: A program written in a high level language is called source code and its equivalent program in machine language is called object code

Q6. Define header files

Ans: Header files contain information that is required by the program in which these are used. It has .h extension

Q7. What is meant by pre-processor directive?

Ans: Pre-processor directive is used to include a header file at the beginning of program. Pre-processor directive is a code for the compiler to include a header file

Q8. State the syntax of pre-processor directive

Ans: The syntax of pre-processor directive to include a header file in a program as

#include <name of header file>

Q9. Define reserved words

Ans: Reserved words are special words which are reserved by a programming language for specific purpose in program. These cannot be used as variable names

Q10. Give some examples of reserved words of C++

Ans: Some examples of reserved words of C++ are if, void, break, while, case and char

Q11. Write down the structure of a C++ program

Ans: A C++ program has the following structure

Pre-processor directives
Void main ()
{
Body of main() function
}

Q12. How does a C+ program start?

Ans: A C++ program has the following structure

Pre-proessor directives
Void main()
{
Body of main() function
}

Q12. How does a C++ program start?

Ans: A C++ program starts with pre-processor directives, followed by the line void main () function and then the body of main () function is written within curly brackets { and }

Q13. Describe the functionality of "Body of main() functions".

Ans: Body of main () function consists of executable statements. These statements perform a specific task when the CPU executes the program. There is no restriction of the number of statement that can be written in the body of main () function.

Q14. Define Statement terminator

Ans: In C++ semicolon is a statement terminator. It marks the end of a statement. All the C++ statements must end with semicolon.

Q15. What would happen if ";"missing?

Ans: If ":"is missing the compiler will give syntax error number and also the message that "," is missing. The error number and message may vary depending on the compiler used

Q16. Why comments are used in programming languages?

Ans: All the programming language allows comments in programs. Comments are explanatory statements that helps the reader in understanding source code. Comments can be entered at any location in the program. Comments are ignored during program execution, which means they are not executable statements.

Q17. How many types of Comments are there?

Ans: There are two types of comments in C++. These are given below

1. Single line Comments
2. Multiple Line Comments

Q18. Define constant

Ans: In computer programming a constant is a value that does not change during execution of program

Q19. Give some example of constants

Ans: Some examples of constants are 42, 7.25 's' and computer respectively.

Q20. What is meant by Variable?

Ans: A variable is a name of memory location where data is stored

Q21. Why variable are used in computer programs?

Ans: Variables are used in computer programs to store values of different data types

Q22. State the purpose of data types

Ans: Data types are declarations of variables for storing various types of data. Data types have different storage capacities

Q23 which data types are used in C++ programming?

Ans: The data types used IN C++ programming are as follows

1. Integer
2. Floating point
3. Double precision
4. Character

Q24. Make a table of types of integer

Ans: The following table shows the integer types, the number of bytes it takes n memory to store the value and the range of numbers it can store

Integer type	Number of Bytes	Range of Numbers
Unsigned int	4 bytes	0 to 4294967295
Short int	2 bytes	-32768 to 32767
Unsigned short int	2 bytes	0 to 65535
Unsigned long int	4 bytes	0 to 4294967295

Q25. Make a table of types of floating point

Ans: the following table shows the floating point types, the number of bytes it takes in memory to store the value and the range of real numbers it can store

Floating type	Number of bytes	Range of numbers
Float	4 bytes	-3.4^{35} to 3.4^{38} (with 6 digits of precision)

Double	8 bytes	-17^{308} to 1.7^{308} (with 15 digits of precision)

Q26. What does constant qualifier mean?

Ans: In C++ programming language const defines a variable whose values cannot be changed throughout the program. When the const qualifier is used with a variable it no longer remains a variable because its value will not be changed. A variable defined with the const qualifier must be assigned some value.

Q27. State the syntax of const

Ans: Const qualifier has the following syntax

Const data_type variable = constant;

Q28. Why variables are declared in C++?

Ans: In C++, all the variables that are going to be used in a program must be declared before use

Q29. What is meant by declaring a variable?

Ans: Declaring a variable means specifying the data type of a variable. It allows the computer to decide how many bytes should be set aside in memory for storage of value that is going to be assigned to the variable in the program

Q30 give three examples of variable declarations

Ans:

1. Int x y z
2. Float length breadth sum
3. Char ch

Q31. What is meant by initialization of a variable?

Ans: A variable may be initialized at the beginning of a program when it is declared initializing a variable means assigning it an initial value

Q32. Give three examples of initializing variables

Ans:

1. Int x=4, y=5
2. Float length=12.5 breadth=15.25 sum=0
3. Char ch=a

Q33. Why type casting is used in C++?

Ans: Type casting is used in C++ to convert data type from one type to another

Q34. Name the types of type casting

Ans: There are two types of type casting

1. Implicit type casting
2. Explicit type casting

Q35. State the functionality of implicit type casting

Ans: Implicit type casting automatically converts a data type to another

Q36. State the functionality of explicit type casting

Ans: In Explicit type casting, a special operator is used to convert one data type to another

Q37. State the general form for conversion

Ans: The general form for conversion is

(type) expression

Q38. Define stream

Ans: A stream is a sequence of data that flows In and out of the program

Q39. Which standard statements are used to perform I/O operations?

Ans: The cin and cout are the standards statements that use the iostream.h header file for performing I/O operations

Q40. Which functions are used for handling I/O?

Ans: The functions getch(), gets() and puts() are also used for handling input/output operations

Q41. State the use of cout statement

Ans: The cout statement is used to output text or values on the screen

Q42. State the syntax cout statement

Ans: The following is the syntax of cout statement

Cout<<character string/variable

Q43. What is the purpose of insertion operator?

Ans: The purpose of insertion operator is to display the contents of the character string or the values stored in the variable on the screen. It directs the output to the standard output device, which is monitor

Q44. State the use of cin statement

Ans: The cin statement is used to input data from the keyboard and assign it to one or more variables

Q45. State the syntax cout statement

Ans: The following is the syntax of cin statement

Cin>>variable;

Q46. Name the functions which are used, for handling I/O operations

Ans: Following functions are also used for handling I/O operations

1. Getch() function
2. Getche() function
3. Gets() and puts() function

Q47. State the function of getch() in C++.

Ans: The getch() function is used to catch a character from the keyboard. The getch() functions reads a single character from the keyboard but does not show on the screen. For this functionality, you can use the getch() function to hold the output window until hitting any key from the keyboard.

Q48. State the function of getche() in C++

Answer

If the user wants the typed character to be displayed on the screen then another similar function getche() is to be used in this function, the letter e is added which means to echo or display the input character on the screen

Q49. Write down the functionality of gets() and puts() functions

Ans: The gets() functions is used to input a string from the keyboard and the puts() is used to display it on the screen. In C++ strings are handled as arrays gets() and puts() defined in <cstdio> header file

Q50. What is meant by escapes sequence?

Ans: Escape sequences are special characters used to control the output look on output devices these characters are not printed. These are used inside the output statement

Q51. State the use of escape sequences

Ans: Escape sequences are used for special purposes in programming such as to begin printing on the next line to issue a tab to print special characters etc

Q52. Write the names of some commonly used escape sequences

Ans: The commonly used escape sequences are \a, \b, \r, \t, \\, \' and \\"

Q53. Make a list of any three escape sequences with their use

Answer

Escape sequences	Purpose
\a	Produces alert (beep) sound
\b	Moves cursor backward by one position
\n	Moves cursor to the beginning of next line

Q54. What is meant by manipulator in C++?

Ans: A manipulator is a command in C++ that is used for formatted output. It modifies the output in various ways

Q55. What are the most commonly used manipulators in C++? How they are used in programs?

Ans: The most commonly used manipulators in C++ are endl and setw. The iomanip.h header file should be included when manipulators are used in a program. Only the endl manipulator can be used without using iomanip.h file.

Q56. What is the use of endl manipulator?

Ans: The endl manipulator has the same function as the \n escape sequence. It causes a linefeed in the cout statement so that the subsequent text is displayed on the next line.

Q57. What is the use of setw manipulator?

Ans: The setw manipulator is used in output statement to set the minimum field width

Q58. State the general form of setw manipulator?

Ans: Setw has the general form

Setw(n)

Q59. Make a table of any three commonly used header files with their purpose

Answer

Header file	Purpose
Iostream.h	Provides basic input/output operations such as cin and cout
Conio.h	Stands for console input/output. It manages input/output on console based applications. Console application take input from keyboard and display output on monitor
Math.h	Provides basic mathematical such as sqrt(), pow() etc.

Q60. Define operator.

Ans: An operator is a symbol that tells the computer to perform a specific task.

Q61. Name the types of operators that are commonly used in C++?

Ans: The following types of operators are commonly used in C++

1. Assignment operator
2. Arithmetic operators
3. Arithmetic assignment operators
4. Increment/Decrement operators
5. Relational operators
6. Logical operators
7. Ternary operators

Q62. What is the symbol and use of assignment operator?

Ans: Assignment operator is equal sign (=). It is used to assign value of an expression to a variable

Q63. State the general form of assignment operator

Ans: Assignment operators has the following general form

Variable = expression;

Q64. What is the use of arithmetic operator?

Ans: Arithmetic operators are used to perform arithmetic operations that include addition, subtraction, multiplication, division and to find the remainder of integer division

Q65. Make a list of types of arithmetic operators

Ans.

Operator	Operation
+	Addition
-	Subtraction
*	Multiplication
/	Division

%	Modulo Operator

Q66. What is meant by arithmetic assignment operators?

Ans: There are a number of assignment operators unique to C++ which are known as arithmetic assignment operators. These include +=, -=, /= and %=

Q67. Make a list of any three arithmetic assignment operators with their operations.

Ans.

Operator	Operations
+=	Operand and assigns the result to the left side
-=	Subtracts the right side from the left side operand and assigns the result to the left
*=	Multiplies the right side operand with the left side operand and assigns the result to the left

Q68. Why relational operators are used?

Ans: Relational operators are used to compare two values of the same type. These operators are very helpful in computer programming when a flow of program is based on a condition. After evaluation of a relational expression the result produced is True or False

Q69. How many types of relational operators are available in C++? Write their names

Ans: Six types of relational operators are available in C++ language. Their names are given in the following table

Operator	Operations
==	Equal to
!=	Not equal to

<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to

Q70. Define logical operators

Ans: Logical operators are used in programming when it is required to take some action based on more than one condition

Q71. What is meant by compound condition?

Ans: When two or more conditions are combined, it is called compound condition

Q72. State the types of logical operators

Ans: There are three types of logical operators. Their names are given in the following table

Operator	Operation
&&	AND
||	OR
!	AND

Q73. Why AND operator is used in C++?

Answer

AND operator is used in C++ to form compound condition in which two relational expressions are evaluated. One relational expression is to the left and the other to the right of the operator. If both of the relational expression (conditions) are true then the compound conditions is considered true otherwise it is false.

Q74. Draw a truth table of AND logical operator

Ans.

Expression 1	Expression 2	Expression 1 & Expression 2
False	False	False
False	True	False
True	False	False
True	True	True

Q75. Why OR operator is used in C++?

Ans: Logical OR operator is C++ is used to form a compound condition. Just like the logical AND operator one relational expression is to the left and the other to the right of the OR operator. The compound condition is true if either of the conditions is true. It is considered false only if both of the conditions are false

Q76. Draw a truth table of OR logical operator.

Ans:

Expression 1	Expression 2	Expression 1 || Expression 2
False	False	False
False	True	False
True	False	False
True	True	true

Q77. Why NOT operator is used in C++?

Ans: The logical NOT operator is used in C++ with a single expression (condition) and evaluated to true if the expression is false and vice versa. In other words, it reverses the result of a single expression

Q78 draw a truth table of OR logical operator

Ans:

Expression	!Expression
False	True
True	False

Q79. Define ternary operator

Ans: The ?: operator is known as ternary operator. It returns one of two values depending on the results of a condition. Therefore, it is also known as conditional operator. It is very useful in situation where the programmer needs to choose one of two options depending on a single condition

Q80. State the general form of ternary operator

Ans: The general form of ternary operator is

Condition? Expression1 Expression2:

Q81. Define increment operator

Ans: The increment operator is - - and it subtracts one from the value stored in a variable

Q82. Define decrement operator

Ans: The decrement operator is + + and it is used to add one to the value stored in a variable

Q83. Define prefix.

Ans: When increment or decrement operator is written before the variable. It is known as prefix

Q84. Do + +x and x + + always have same effect?

Ans: No in some situations ++x and x++ have different effect. This is because ++x increments x before value whereas x++ increments x after its value is used

Q85. Define postfix

Ans: When increment or decrement operator is written after the variable. It is known as postfix

Q86. Which operator is known as unary operator?

Ans. The operator that works on a single operand is known as unary operator

Q87. Which operator is known as binary operator?

Ans: The operators that work on two operands are known as binary operators

Q88. What are binary operators?

Ans: Binary operators are -, +, *, /, % and logical operators && and ||.

Q89. What is order of precedence of operators?

Ans: Order of precedence of operators describes the rules according to which operations are to be performed in an expression

Q90. What is meant by an expression?

Ans: An expression is a combination of constants, variables and operators. Constants and variables are operands and operators tell the computer what types of action to perform on the operands

Q91. Name the types of expressions in C++.

Ans: There are three types of expressions in C++. These are as follows

1. Arithmetic expression
2. Relational expression
3. Compound or logical expression

Q92. Define arithmetic expression

Ans: An expression that contains constants, variables and arithmetic operators is called arithmetic expression

Q93. Define relational expressions

Ans: An expression that contains a relational operator to compare values of same type is called relational expression. Relational expressions are used in programming to create conditions based on which computer takes different path during program execution.

Q94. What is meant by compound expression?

Ans: An Expression that combines two or more conditions using logical operators && or II is called compound expression

Q95. Write a simple C++ program to display "Windows in C++" on the screen

Ans: Program

```
#include <iostream.h>
#int main()
{
Std: : cout << "Hello, world!";
Return 0:
}
```

Q96. Write a program to print the number entered by a user using C++ cout statement

Ans: Program

```
#include <iostream.h>
Using namespace std;
Int main()
{
Int number:
Cout <<"Enter an integer: ":
Cin >> number;
Cout << "You entered"<< number;
Return 0;
}
```

Q97. Write a C++ program to add two numbers

Ans: Program

```
#include <iostream>
Using namespace std;
Int main ( )
{
Int firstNumber, secondNumber, sumOfTwoNumbers;
Cout<<"Enter two integers";
Cin>>firstNumber>>secondNumber;
sumOfTwoNumbers=firstNumber+secondNumber;
cout<<firstNumber<<" +"<<secondNumber<<";
<<sumOfTwoNumbers";
Return0;
}
```

Q98. Write a C++ program to find quotient and remainder

Ans: Program

```
Include <iostream>
Using namespace std;
Int main()
{
Int division, dividend, quotient, remainder;
Cout<< "Enter dividend: ;
Cin >> dividend;
Cout << "Enter divisor: ";
Cin >> divisor;
Quotient = divided/divisor;
Remainder= dividend % divisor;
Cout<< "Quotient = "<< quotient << end1;
Cout << "Remainder = " << remainder;
Return 0;
```

}

Q99. Write a program to swap two numbers

Ans: Program

```
#include <iostream>
Using namespace std;
Int main ( )
{
Int a=5, b=10, temp:
Coul<<"Before swapping"<<end1;
Coul<<"a="<<a<<,b="<<b<<end1;
Temp=a:
B=temp:
Coul<<"\nAfter swapping"<<end1;
Coul<<"a=: <<a<<",b="<<b<<end1;
Return 0:
}
```

Q100. Write a C++ program to multiply two numbers

Ans:

```
#include <iostream>
Using namespace std;
Int main()
{
Double firstnumber, secondNumber, productoftwoNumbers;
Cout << Enter two numbers: ";
Cin >> firstNumber >> secondNumber;
productoftwoNumbers = firstNumber * SecondNumber;
cout << "Product = "<<productoftwoNumbers;
return 0;
}
```

Q101. Write a C++ program to get input from user

Ans Program

```
#include <iostream>
Using namespace std:
Int main()
{
Int num:
Cout<<"Enter a number":
Cin>>num:
Cout<<"You entered "<<num:
Return 0:
}
```

Q102. Write a program to print integer in C++.

Ans: Program

```
#include<iostream>
Using namespace std:
Int main()
{
Int num=10:
Cout<<"The value of num is "<<num;
Return 0;
}
```

Q103. Write a C++ program that outputs the following text on screen

Oh what

A happy day!

Oh yes,

What a happy day!

Use the manipulator endl where appropriate

Ans: Program

```
#include <iostream>
Using namespace std;
Int main()
{
Cout <<"Oh what " << end1;
Cout <<"a happy day! "end1;
Cout <<"Oh yes, "<<end1;
Cout <<"what a happy day!"<< end1;
Return 0;
}
```

Q104. Write a C++ program that defines two variables for floating point numbers and initialized them with the vales 123,456 and 76.453 then display the sum and the difference of these two numbers on screen

Ans: Program

```
#include <iostream>
Using namespace std:
Int main ( )
{
Float x=123.456F, // or double
Y=76/543F, sum:
Sum=x+y:
Cout<<"Total:"<<x<<"+"<<y<< "="<<sum<<end1;
Cout<<"Difference:"<<x<<"-"<<y<<"="<<(x-y)<<end1;
Return 0;
}
```

Q105. Write a C++ program that reads integral decimal values and generates octal, decimal and hexadecimal output

Ans: Program

```
#include <iostream.h>
Using namespace std:
```

```
Int main()
{
Int number;
Cout <<"Please enter an integer: ";
Cin>> number;
Cout << uppercase // for hex-digits
<<octal \t decimal \t hexadecimal\n"
<< oct << number << "\t
<< dec << number << "\t"
<< hex << number << end1;
Return 0;
}
```

Q106. Write a C++ program in which a user enters a character and generates its output in octal, decimal and hexadecimal code

Ans: Program

```
#include <iostream>
Using namespace std;
Int main ()
{
Cout<<"Please enter an integer":
Cin >> number;
Cout << uppercase // for hex digits
                <<"octal \t decimal \t hexadecimal\n"
                <<oct << number << "\t"
                << dec << number << "\t
                <<hex << number << end1;
Return 0;
}
```

Q107. Write a C++ program that reads an article number , a quantity, and a unit price from the keyboard and outputs the data on screen as displays on the opposite page.

Ans: Program

```
#include <iostream>
#include <iomanip.h>
Using namespace std:
Int main ()
{
Long number = 0:
Int cout = 0:
Cout <<"\nPlease enter article characteristics. \n":
Cout << "Article number: ";
Cin >> number:
Cin >> count:
Cout >> count:
Cout << "Price per pieces":
Cin >> price"
Cout << "\n\tArticle Number Quantity price per piece":
Cout << "\n\t"
        << SETW (8) << number
        << setw (16) << count
        << fixed << setprecision (2)
        << set w (16) << price << "Dollar" << end1:
Return 0:
}
```

Q108. Write a C++ program that reads any given character code (a positive integer) from the keyboard and displays the corresponding character and the character code as decimal, an octal and a hexadecimal on screen.

Ans: Program

```
#include <iostream>
#include <iomanip.h> / / Manipulator set w ()
Using namespace std:
Int main )
```

```
{
Unsigned char c = 0;
Unsigned int code = 0;
Cout << "\nPlease enter a decimal character code:";
Cin>>code;
C = code ;
Cout << "\nThe corresponding character: "<< c << end1;
Code = c: // Character code is only
Cout << "\n Character code is only
        <<"\ndecimal "<< set w(3)  << dec << code
        <<"\n octal "<< set w (3) << oct << code
        <<"\n hexadecimal : "<< set  (3) << hex << code << end1;
Return 0;
}
```

Q109. Write a program in C++ to print a welcome text in a separate line

Ans. Program:

```
#include<iostream.h>
Using namespace std;
Int main()
{
Cout << "Welcome to \n;
Cout <<"C++ programming "<<end1<end1 ;
Return 0;
}
```

Q110. Write a program in C++ to check whether the primitive values crossing the limits or not.

Ans. Program:

```
#include <iostream>
Using namespace std;
```

```
{
        Char gender = 'F'           // char is single quoted
        Book is Employed = true;          // true (non zero) or false (0)
Unsigned short num of sons = 2; // [0, 255]
Short yearofAppt = 2009;          // [-32767, 32768]
Unsigned int YearlyPackage  = 150000  // [ 0, 429496725]
Double height = 79, 48            // with fractional part
Float gpa = 4. 69f                    // suffix f for float
Long total Drawan = 12047235L;        // suffix f for float
Long long balance = 995324987LL ;    // need suffix LL for long long int
Cout <<"The gender is : << gender << end1;
Cout << "Is she married? : << is Employed << end1;
Cout << "Year of her appointment
Return 0;
}
```

Q111. Write a C++ program to demonstrate example of cascading cout and cin

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
    Int a,b;
        //without cascading cout
    Cout << "Enter value of a and b: ";
    //cascading cin
      Cin >> a >>b;
                //cascading cout
    Cout<< "A "<< a << ", B: << b << end1;
    Return 0;
}
```

Q112. Write a program in C++ to display types or arithmetic operations using mixed data type

Ans. Program:

```
#include <iostream>
#include <iomanip>    // formatting floatin point numbers with 1 decimal place
Using namepace std;
Int main ()
{
Int m1= 5, m2= 7;
Double d1 = 3.7 d2= 8.0;
Cout << fixed << setprecision (1);
Cout << "  "<< m1 << "+" << m2 <<  "= " << m1 + m2 << end1;
Cout << " " << d1 << " + " << d2 << "= " << d1 + d2 << end1;
Cout << " "<< m1 << " + " << d2 << "= "<<  m1 + m2 << end1;
Cout << " " << m1 <<" / " << d2 << "=" << m1/d2 <<  end1;
Cout << end1;
Return 0;
}
```

Q113. Write a program in C++ to display the operation of pre and post increment and decrement

Ans. Program:

```
#include <iostream>
Using namespace std;
{
Int num = 57;
Cout << "The number is "<< num << end1;
Num ++;
Cout <<"After post increment by 1 the number is : "<< num << end1;
++num;
Cout << "After pre increment by 1 the number is:
```

```
Num = num + 1;
Cout << "After increasing by 1 the number is : " << num << end1;// 79
Num;
Cout <<"After post decrement b 1 the number is:  <<  num << end1;
--num;
Cout <<"After pre decrement by 1 the number is " << num << end1;
Num = num – 1;                  // num is now decreased by 1
Cout <<"After decreasing by 1 the number is : << num << end1;
Cout << end1;
Return 0;
}
```

Q114. Write a program in C++ to print the result of the specified operations

Ans. Program

```
#include <iostream>
Using namespace std;
Int main()
{
Cout << "Result of 1st expression is  "<< (-1+4*6)<<"\n";
Cout << "Result of 2nd expression is  "<< ((35+5)%7)<<"\n";
Cout << "Result of 3rd expression is  "<< (14+-4*6/11)<<"\n";
Cout << "Result of 4th expression is  "<< (2+15/6*1-7%2)<<"\n\n";
```

Q115. Write a program in C++ to calculate the volume of a sphere

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main ()
{
    Int rad1;
    Float volsp;
```

```
Cout<<"Input the radius of a sphere ":
Cin>>rad1;
Volsp=(4*3.14*rad1*rad1)/3
Cout<<"the volume of a sphere is "<< volsp << end1;
Cout << end1;
Return 0;
}
```

Q116. Write a program in C++ to calculate the volume of a cube

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
    It sid1;
     Float volcu;
    Cout<< "Input the side of a cube ";
    Cin>>sid1;
    Volcu=(sid1*sid1*sid1);
    Cout<< "the volume of a cube is "<< volcu << end1;
     Cout << end1;
     Return 0;
}
```

Q117. Write a program in C++ to calculate the volume of a cylinder

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
        Int rad1, hgt;
```

```
Float volcy:
Cout<< "Input the radius of the cylinder ":
Cin>>rad1:
        Cout<<"Input the height of the cylinder ":
Cin>>hgt:
Volcy=(3.14*rad1*rad1*hgt):
Cut<< "The volume of a cylinder is "<< volcy << end1:
    Cout << end1:
    Return 0:
}
```

Q118. Write a program in C++ to find the area and perimeter of a rectangle

Ans. Program:

```
#include <iostream>
Using namespace std:
Int main ()
{
    Int width, length, area, peri:
    Cout <<"Input the length of the rectangle":
    Cin >> length:
        Cout <<"Input the width of the rectangle":
    Cin >> width:
    Area = (length * width)
        Peri = 2*(length + width)
    Cin>> width:
    Area = (length*width)
        Per=2*(length + width)
Cout << "the area of the rectangle is : "<< area << end1:
Cout <<"the perimeter of the rectangle is : <<peri << end1:
Return 0:
}
```

Q119. Write a program in C++ to find the area of any triangle using Hero's formula

Ans Program:

```
 #include <iostream>
#include <math.h>
Using namespace std;
Int main()
{
    Float side1, side2, side3, area, s;
   Cout<<"Input the length of 1st side of the triangle ";
   Cin>>side1;
   Cout<<"Input the length of 2nd side of the triangle ";
   Cin>>side2;
   Cout<<"Input the length of 3rd side of the triangle ";
   Cin>>side3;
          S= (side1+side+side3)/2
          Area= sqrt(s*(s-side1)*(s-side2)*(s-side3));
    Cout<<"The area of the triangle is : << area << end1;
    Cout << end1;
    Return 0;
}
```

Q120. Write a program in ++ to find the area and circumference of a circle

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
        Float radius, area, circum;
Cout<< "Input the radius (1/2 of diameter) of a circle ";
Cin>>radius;
```

```
Circum= 2*3.142 radius;
        Area= 3.142*(radius*radius)*
Cout<<*the area of the circle is : *<< area << end1;
Cout<< end1;
}
```

Q121. Write a program in C++ to convert temperature in Celsius to Fahrenheit

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Float frh, cel;
Cout << *Input the temperature in Celsius *;
Cin >> cell;
Frh = (cel * 9.0) / 5.0 + 32;
Cout << *The temperature in Celsius *<< cell << end1;
Cout << *The temperature in Fahrenheit *<< frh << end1;
        Cout << end1;
Return 0;
}
```

Q122. Write a program in C++ to convert temperature in Fahrenheit to Celsius

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main ()
{
Float frh, cel;
Cout << *Input the temperature is Fahrenheit*;
Cin >> frh ;
```

```
Cel = (frh * 5.0) – (5*0 * 32) / 9:
Cout << "the temperature in Fahrenheit :" << frh << end1;
Cout <<"the temperature in Celsius:" << cel << end1;
        Cout << end1:
Return 0:
}
```

Q123. Write a program in C++ to find the third angle of a triangle

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Float ang1, ang2, ang3;
Cout<< "Input the 1st angle of the triangle ";
Cin>>ang1;
Cout<<"Input the 2nd angle of the triangle ";
Cin>>ang2;
        Ang3=180-(ang1+ang2);
Cout << " The 3rd of the triangle is << ang3 << end1;
        Cout << end1;
Return 0;
}
```

Q124. Write a program in C++ that converts kilometers per hour to miles per hour

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
```

```
Float kmph, miph:
Cout << " Input the distance in kilometer ";
Cin>> kmph;
      Miph = (kmph = 0.61213172);
Cout<<"The "<<kmph<<"km/hr, means"<< "Miles/hr. "<< end1;
      Cout << end1;
Return 0;
}
```

Q125. Write a program in C++ to convert temperature in Kelvin to Fahrenheit

Ans. Program:

```
#include <iostream>
Using namespace std:
Int main()
{
Float kel, frh:
Cout << "Input the temperature in Kelvin ":
Cin >> kel:
Frh = (9.0/5) * (kelp = 273.15) + 32
Cout << the temperature in Kelvin : "<< kel << end1:
Cout<< the temperature in Fahrenheit "<< frh << end1;
      Cout << end1:
Return 0:
}
```

Q126. Write a program in C++ to convert temperature in Kelvin to Celsius

Ans. Program:

```
#include <iostream>
Using namespace std:
Int main()
{
```

```
Float kel, cel:
Cout << "Input the temperature in Kelvin ";
Cin>> Kel;
Cel= kel – 273.15;
Cout << "The temperature in Kelvin : "<< Kel << end1;
Cout <<"The temperature in Celsius "<< cel << end1;
Cout << end1;
Return 0;
}
```

Q127. Write a program in C++ to convert temperature in Fahrenheit to Kelvin

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Float kel, frh:
Cout << "Input the temperature in Fahrenheit ";
Cin >> frh;
Kel = (5.0/9) * (frh – 32) + 273.15;
Cout << The temperature in Fahrenheit : " << frh << end1;
Cout << "the temperature in Kelvin : " << kel << end1;
Cout << end1;
Return 0;
}
```

Q128. Write a program in C++ to convert temperature in Celsius to Kelvin

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
```

```
{
Float kel, cel;
Cout << "Input the temperature in Celsius ";
Cin >> cel;
Kel = cel + 273.15;
Cout<< "The temperature in Celsius: "<< cel << end1;
Cout << "The temperature in kelvin : "<< kel << end1;
        Cout << end1;
Return 0;
}
```

Q129. Write a program in C++ to find the area of Scalene Triangle

Ans. Program:

```
#include <iostream>
#include <math.h>
Using namespace sd;
Int main()
{
 Float side 1, side 2, ang1, area;
Cout<<"Input the length of a side of the triangle ";
 Cin>>side1;
 Cout<<"Input the length of another side of the triangle ";
 Cin>>side2;
 Cout<<"Input the angle between these sides of the triangle: ";
  Cin>>ang1;
       Area= (side 1* side2 *sin (3.14159/180)*ang1))/2;
 Cout<< "the area of the Scalene Triangle is : << area << end1;
 Cout << end1;
      Return 0;
}
```

Q130. Write a program in C++ to compute the total and average of four numbers

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
    Float n1, n2, n3, n4, tot, Avg;
Cout<<"Input 1st two numbers (separated by space) ";
    Cin>> n1>> n2;
Cout<<"Input last two numbers (separated by space)
    Cin>> n3 >> n4
    Total =n1+n2+n3+n4;
    Avg=tot/4;
Cout<< "The total of four numbers is "<< tot << end1;
Cout<<"the average of four numbers is << Avg << end1;
Cout << end1;
Return 0;
}
```

Q131. Write a program in C++ to input a single digit number and print a rectangular form of 4 columns and 6 rows

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main ()
{
Int x;
Cout <<"Input the number";
    Cin>> x;
Cout << " "  << x <<x <<x << end1;
Cout << ""<< x <<""<<""<<x<<end1;
```

```
Cout << "" << x <<" "<<x<<end1;
Cout <<""<<x<<x<<X<<x<<End1;
Cout << end1;
Return 0;
}
```

Q132. Write a C++ program, which accept principle, rate and time from user and print the simple interest

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Float p, r, t, I;
Cout<< "Enter Principle (amount: ";
Cin>> p;
Cout << "Enter Rate: ";
Cin >> r;
Cout << Enter time: ";
Cin >> t;
I = (p * r * t) / 100;
Cout << simple interest is "" << I;
}
```

Q133. Write a program to find the percentage of marks obtained in five subjects

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Float sub1, sub2, sub3, sub4, sub5, perc, total;
```

```
Cout<< "Enter the Marks obtained in 5 subjects: ";
Cin >> sub1 >> sub2 >> sub3 >> sub4 >> sub5;
Total = sub1 + sub2 + sub3 + sub4 + sub5;
Perc = (total /500) * 100;
Cout << "\nThe Percentage marks are " perc << "%";
}
```

Q134. Write a program in C++ to compute the specified expressions and print the output

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Cout << "Result of the expression "<<"(25.5 * 3.5 = 3.5) / (40.5 – 4.5) is
      "<< (25.5 * 35 – 3.5 * 35) / 40.5- 4.5) <<"\n";
}
```

Q135. Write a program in C++ to test the type casting

Ans. Program

```
#include <iostream>
#include <iomanip.h>
Using namespace std;
Int main()
{
    Cout<<"Print floating point number in fixed format with 1 decimal place: ";
Cout << fixed << setprecision(1);
Cout <<"nTest explicit type casting :\n";
Int 11 = 4 i2 = 8;
Cout << 11 /12 end1;
Cout <<(double)i1 / i2 << end1;
```

```
Cout << i1/ (double) i2 << end1;
Doubled d1= 5.5, d2= 6.6;
Cout<<"\nTest implicit type casting :\n";
Cout<< (int)(d1 / i2) << end1;
D1= i1;
Cout << double truncates to int! : \n";
I2= d2;
Cout << i2 << end1: // 6
}
```

Q136. Write a program in C++ to print the following pattern.

```
        Xxxxx
   X    x        x      x
   X             x      x
 X               xxxxx  xxxxxx
   X             x      x
```

Ans. program

```
#include <iostream>
Using namespace std;
Int main ()
{
Cout < "xxxx\n";
Cout << x   x      x      x/n;
Cout <<     "x     x      x\n;
Cout <<     "x   xxxxx  xxxxxxx\n;
Cout <<     "x     x      x/n;
Cout << "xxxxxx\n;
}
```

Q137. Write a program in C++ which swap the values of two variables not using third variable.

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
    Int num1, num2, temp;
    Cout << "Input 1st number";
    Cin >> num1;
    Cout << "Input 2nd number ";
    Cin >> num2;
    Num2= num2+num1;
    Num1=num2-num1;
    Num2=num2-num1;
Cout << "After swaping the 1st number is << num2 <<"\n"
Cout << "After swaping the 2nd number is "<<num 1<<"\n\n";
}
```

Q138. Write a program in C++ to print the code (ASCII cod/Unicode code etc) of a given character

Ans. Program

```
#include <iostream>
Usigng namespace std:
Int main()
{
Char sing_ch:
      Cout << "Input a character: ";
       Cin >> sing_ch;
Cout << "The ASCII value of "<<sing_ch<<"is: <<(int)sing_ch << end1;
Cout << "The character for the ASCII value " <<(int)sing_ch << is:"
Return 0;
}
```

Q139. Write a program in C++ to enter length in centimeter and convert it into meter and kilometer

Ans. Program:

```
#include <iostream>
Using namespace std:
Int main()
{
Float km, met, cent:
Cout << "Input the distance in centimeter ";
 Cin >> cent:
        Met = (cent/100):
        Km= (cent/100000):
        Cout << "The distance in meter is: "<< met << end1:
        Cout << "The distance in kilometer is: "<< km << end1;
        Cout << end1:
Return 0:
}
```

Q140. Write a program in C++ that converts kilometers per hour to miles per hour.

Ans. Program:

```
#include <iostream>
Using namespace std;
Int main()
{
Float kmph, miph:
Cout <<"Input the distance in kilometer ":
Cin>> kmph;
        Miph = (kmph = 0.6213712):
Cout << "The "<< kmph <<"km/hr means "<< miph << "Miles/hr"<<end1;
        Cout << end1;
return 0;
```

}

Q141. Write a program in C++ to calculate area of an equilateral triangle

Ans. Program

```
#include <iostream>
Using namespace std;
#include<math.h>
Main ()
{
Float s1;
Float area;
Cout << Input the value of the side of the equilateral triangle: ";
Cin>>s1;
Area=sqrt(3)/4*(s1*s1)
Cout<<"The area of equilateral triangle is: "<<area<<end1;
Cout << end1;
Return 0;
}
```

Q142. Write a program in C++ to print the area of a hexagon

Ans. Program

```
#include <iostream>
#include <math.h>
Using namespace std;
Int main()
{
Float ar,s;
        Cout << "Input the side of the hexagon: ";
Cin>> s :
Ar= (6*(s*s))/(4*tan(M_PI/6));
Cout<<"The area of the hexagon is: "<<ar<<"\n;
```

}

Q143. Write a program in C++ to print the area of polygon

Ans. Program

```
#include <iostream>
#include <math.h>
Using namespace std;
Int main()
{
Float ar, s, n;
      Cout << "Input the number of sides of the polygon: ";
Cin>> n;
Cout << "Input the length of each side of the polygon: ";
Cin>> s;
Ar= (n* (s *s)) / (4/0 * tan(M_PI / n)));
Cout << "The area of the polygon is: "<<ar<"\n;
}
```

Q144. Write a program in C++ to compute the distance between two points on the surface of earth.

Ans. Program

```
#include <iostream>
#include <math.h>
Using namespace std;
Int main ( )
{
Double d, la1, la2, lo1, lo2, er, r;
Cout<<"Input the latitude of coordinate 1:";
Cin>>la1;
Cout<<"Input the longitude of coordinate 1:";
Cin>>lo1;
```

```
Cout<<"Input the latitude of coordinate 2:";
Cin>>la2;
Cout<<"Input the longitude of coordinate 2:";
Cin>>lo2;
R=0.01745327; //Pi/180=3.14159/180
La1=la1*r;
La2=la2*r;
Lo1=lo1*r;
Lo2=lo2*r;
Er=6371.01;     //kilometers
D=er*acos ((sin(la1)*sin(la2))+(cos(la1)*cos(la2)*cos(lo1-lo2)));
Cout<<"The distance between those points is: "<<d<<"\n";
}
```

Q145. Write a C program to swap first and last digits of any number.

Ans. Program:

```
#include <iostream>
#include <math.h>
Using namespace std;
Int main()
{
Int n, first, last, sum, digits, nn, a, b;
Cout << "Input any number: ";
Cin >> n;
Digits = (int)log10(n);
First = n / pow(10, digits);
Last = n % 10;
A = first * (pow(10, digits));
B = n %a;
N = b /10;
Nn = last * (pow(10, digits))+ (n * 10 + first);
```

```
Cout << "The number after swaping the first and last digits are: "<< nn << end1;
}
```