1. Basic Elementary Programming →

a. In each of the following, assume that m has the value 5 and n has the value 2 before the statement executes. Tell what the values of m and n will be after each of the following statements executes:
   i. a. m *= n++;
   ii. b. m += --n;

b. Evaluate each of the following expressions, assuming in each case that m has the value **25** and n has the value **7**:
   i. m - 8 - n
   ii. m = n = 3
   iii. m%n
   iv. m%n++
   v. m%++n
   vi. ++m - n--

c. Write code could you execute to find the character whose ASCII code is 100?

d. Write and run a program that shows what happens when each of the following ten "escape sequences" is printed: \a, \b, \n, \r, \t, \v, \', \", \\, \?.

e. Write and run a program that prints the sum, difference, product, quotient, and remainder of two integers. Initialize the integers with the values 60 and 7.

f. Write and run a program that prints the sum, difference, product, quotient, and remainder of two integers that are input interactively.

g. Convert the following equations into corresponding C++ Statements

(a) $Z = \dfrac{8.8\,(a+b)\,2/c - 0.5 + 2\,a/(q+r)}{(a+b)*(1/m)}$

(b) $X = \dfrac{-b + (b*b) + 2\ 4ac}{2a}$

(c) $R = \dfrac{2v + 6.22\ (c+d)}{g+v}$

(d) $A = \dfrac{7.7b\,(xy + a)/c - 0.8 + 2b}{(x+a)\,(1/y)}$

h. Write C++ Programs for the following:

i. Ramesh's basic salary is input through the keyboard. His dearness allowance is 40% of basic salary, and house rent allowance is 20% of basic salary. Write a program to calculate his gross salary.

ii. The distance between two cities (in km.) is input through the keyboard. Write a program to convert and print this distance in meters, feet, inches and centimeters.

iii. If the marks obtained by a student in five different subjects are input through the keyboard, find out the aggregate marks and percentage marks obtained by the student. Assume that the maximum marks that can be obtained by a student in each subject is 100.

iv. Temperature of a city in Fahrenheit degrees is input through the keyboard. Write a program to convert this temperature into Centigrade degrees.

v. Two numbers are input through the keyboard into two locations C and D. Write a program to interchange the contents of C and D.

vi. If a five-digit number is input through the keyboard, write a program to calculate the sum of its digits.

vii. If a four-digit number is input through the keyboard, write a program to obtain the sum of the first and last digit of this number.

viii. If a five-digit number is input through the keyboard, write a program to print a new number by adding one to each of its digits. For example if the number that is input is 12391 then the output should be displayed as 23402.

ix. In a town, the percentage of men is 52. The percentage of total literacy is 48. If total percentage of literate men is 35 of the total population, write a program to find the total number of illiterate men and women if the population of the town is 80,000.

x. The length & breadth of a rectangle and radius of a circle are input through the keyboard. Write a program to calculate the area & perimeter of the rectangle, and the area & circumference of the circle.