LAB-3

Objective(s):

- To be familiar with formatted and unformatted I/O in C with preprocessor directives

1. Write a program to do the following
   a) Get input of two float numbers in to variables x & y. receive the mathematical operator (+, -, *, /) using unformatted I/O into the variable Ch1 and perform operations on x & y and display the result.

   b) Define the math operator '+' as PLUS, '-' as MINUS, '*' as MULT & '/' as DIVIDE using preprocessor directives and do the operations over variables (x,y) defined on above question like z=x PLUS y.

   c) Get input of your name, address, age in years, weight and height from keyboard and display the information using unformatted I/O (String I/O).

2. Write a program to produce the output as shown below:

x	y	expressions	results
6	3	x=y+3	x=6
6	3	x=y-2	x=1
6	3	x=y*5	x=15
6	3	x=x/y	x=2
6	3	x=x%y	x=0

3. Given x=3.0, y=12.5, z= 523.3, A=300.0, B=1200.5, C=5300.3, Write a program to display the following:

```
X  y   z=     3.0|     12.5|     523.3|
A  B   C=   300.0|   1200.5|    5300.3|
-----------------------------------------------------------------
X  y   z=   |3.00     |12.50     |523.30
A   B  C=   |300.00   |1200.50   |52300.30
```

4. Given the three numbers a(=8), b(=4),c and constant value PI=3.1415, calculate and display the following result using macros (preprocessor directives)
   a) c = PI * mult(a,b) //the macro mult(a,b) perform the multiplication of a & b(a*b)

   b) c= PI* sum(a,b) //the macro mult(a,b) perform the sum of a & b (a+b)

c) c= PI *sub(a,b) //the macro mult(a,b) perform the subtraction of a & b (a-b)

d) c= PI*div(a,b) //the macro mult(a,b) perform the division of a & b (a/b)

5. Demonstrate the differences among getch(), getche(), getchar(). Demonstrate the difference between scanf() & gets(), printf() & puts().

6. Write a program to take a character input from keyboard and check if it is a number or alphabet or special character using ASCII CODE. Again check if the character is using character functions below:
   a) Alphanumeric (isalnum)
   b) Blank character (isblank)
   c) Alphabetic (isalpha)
   d) Control character (iscntrl)
   e) Number-digit (isdigit)
   f) Upper case (isupper)
   g) Lower case (islower)
   h) Hexadecimal digit (ixdigit)
   i) Graphical character (isgraph)