

LAB 2

Objective(s) :

To be familiar with different data types, Operators and Expressions in C.

1. Write a program to take input of name, rollno and marks obtained by a student in 5 subjects each have its 100 full marks and display the name, rollno with percentage score secured.

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int m1,m2,m3,m4,m5,roll;
    float percent;
    char name[20];
    printf("Enter your name:\t");
    scanf("%[^\n]s",name);
    printf("\nEnter your roll number:\t");
    scanf("%d",&roll);
    printf("\nEnter your marks in 5
subjects:\t"); scanf("%d%d%d%d
%d",&m1,&m2,&m3,&m4,&m5);
    percent=(m1+m2+m3+m4+m5)/5;
    system("cls");
    printf("Name:\t%s",name); printf("\nRoll
no: %d",roll); printf("\nYour
percentage: %f",percent); getch();
    return 0;
}
```

2. Write a program to declare two integer and one float variables then initialize them to 10, 15, and 12.6. Also print the variable values in the screen.

```
#include<stdio.h>
#include<conio.h>
int main()
{
    system("cls");
```

```

    int a,b;
    float c;
    a=10,b=15,c=12.6;
    printf("%d\t%d\t%f\t",a,b,c);
    getch();

}

```

3. Write a C program to prompt the user to input 3 integer values and print these values in forward and reversed order.

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,c;
    printf("Enter any three
    number:\t"); scanf("%d%d
    %d",&a,&b,&c);
    // system("cls"); printf("%d
    %d %d",a,b,c); printf("\n%d
    %d %d",c,b,a); getch();

    return 0;
}

```

4. Write a program to calculate simple and compound interest.

```

#include<stdio.h>
#include<conio.h>
#include<math.h>
int main()
{
    int p,t;
    float si,r,m,n,ci;
    printf ("Enter principle, rate in percentage and
    time:\t");
    scanf ("%d%f%d",&p,&r,&t);
    si=(p*t*r)/100;

```

```

m=(1+r/100);
n=pow(m,t);
ci=p*(n-1);
system("cls");
printf ("Simple interest= %f",si);
printf("\nCompound interest= %f",ci);
getch();
return 0;
}

```

5. Write a program to swap two variables values with and without using third variables.

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b;
    printf("Enter any two
number:\t"); scanf("%d
%d",&a,&b);
    printf("Before swapping a= %d and b= %d",a,b);
    a=a+b;
    b=a-b;
    a=a-b;
    printf("After swapping a= %d and b= %d",a,b);

    getch();
    return 0;
}

```

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,c;

```

```

printf("Enter two number:\t");
scanf("%d%d",&a,&b);
printf("Before swapping a= %d and b= %d\n",a,b);
c=a;
a=b;
b=c;
printf("After swapping a= %d and b= %d",a,b);
getch();
return 0;
}

```

6. Write a program to check odd or even number (a) using modulus operator (b) using bitwise operator (c) without using bitwise and modulus operator (d) using conditional operator.

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
    printf("Enter any number:\t");
    scanf("%d",&num);
    if      (num%2==0)
    {
        printf("%d is even",num);
    }
    else
    {
        printf("%d is odd",num);
    }
    getch();
    return 0;
}

```

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
    printf("Enter any number:\t");

    scanf("%d",&num);

```

```

    if((num&1)==0)
    {
        printf("%d is even",num);
    }
    else
    {
        printf("%d is odd",num);
    }
    getch();
    return 0;
}

```

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int num,q;
    printf("Enter any number:\t");
    scanf("%d",&num);
    q=num/2;
    q=q*2;
    if (q==num)
    {
        printf("The number is even");
    }
    else
    {
        printf("The number is odd");
    }
    getch();
    return 0;
}

```

```

#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
    printf("Enter any number:\t");
    scanf("%d",&num);
    (num%2==0)?printf("The number is
even"):printf("The number is odd");
    getch();
    return 0;
}

```

}

7. Print the value of y for given x=2 & z=4 and analyze the output.

a. y = x++ + ++x;

(=6)

c. y= ++x + ++x + +

+x; (=13)

e. y= x>z? x:z; (=4)

b. y=++x + +

+x; (=8)

d. y = x>z; (=0)

f. y =

x&z;

(=0)

g. y= x>>2 + z<<1; (=0)

a. #include<stdio.h>

#include<conio.h>

int main()

{

int x,y,z;

x=2,z=4;

y = x++ + ++x;

printf("%d",y);

getch(); return

0;

}

b. #include<stdio.h>

#include<conio.h>

int main()

{

int x,y,z;

x=2,z=4;

y=++x + ++x;

printf("%d",y);

getch();

return 0;

}

c. #include<stdio.h>

```

#include<conio.h>
int main()
{
    int x,y,z;
    x=2,z=4;
    y= ++x + ++x + ++x;
    printf("%d",y);
    getch();
    return 0;
}

```

```

d.#include<stdio.h>
#include<conio.h>
int main()
{
    int x,y,z;
    x=2,z=4;
    y = x>z;
    printf("%d",y);
    getch();
    return 0;
}

```

```

e.#include<stdio.h>
#include<conio.h>
int main()
{
    int x,y,z;
    x=2,z=4;
    y= x>z? x:z;
    printf("%d",y);
    getch();
    return 0;
}

```

```

f.#include<stdio.h>
#include<conio.h>
int main()
{
    int x,y,z;
    x=2,z=4;

```

```

        y = x&z;
        printf("%d",y);
        getch();
        return 0;

}

g.#include<stdio.h>
#include<conio.h>
int main()
{
    int x,y,z;
    x=2,z=4;
    y= x>>2 + z<<1;
    printf("%d",y);
    getch();
    return 0;

}

```

8. Write a program to print the size of int, char, float, double and long double data types in C

```

#include<stdio.h>
#include<conio.h>
int main()
{
    char a[10]="Nepal5";
    int b=10;
    float c=20.2;
    double d=5e60;
    long double e=100e10;
    printf("%d,%d,%d,%d,%d.",sizeof(a),sizeof(b),sizeof(c),sizeof(d),sizeof(e));
}

```