**Data Structures and Application Lab – Week 1**

1. Use ternary operator to execute the statements below

Num=-10,num1=0

If(num>0) then res=1 else res=-1

Print the result(res)

If (num>10) then res=1

Else if num1<10 then res=0

Else res=-1

Print the result(res)

1. What is the output of the following program

#include<stdio.h>

main()

{

int a=-10;

printf("%d",!a);

if(!a)

printf("hello");

else

printf("welcome");

a=10;

int b,c,m,n;

b=1,c=3,m=41,n=34;

if(!a && b<c || m<n)

printf("test");

}

1. What is the output of the following program

main()

{

int a=345678;

int b;

b=~a;

printf("%d",b);

}

1. What is the output of the following program

#include<stdio.h>

void f1(int a[]);

void f2(int \*p);

main()

{

int a[]={2,3,4};

f1(a);

printf("%d %d\n",a[1],a[2]);

f2(a);

printf("%d %d",a[1],a[2]);

}

void f1(int a[])

{

a++;

a[1]=45;

}

void f2(int \*p)

{

p++;

p[1]=98;

}

struct \_\_attribute\_\_((packed)) test

{ char t1;

int i;

char ch;

float k;

};

main()

{

struct test t;

printf("%ld",sizeof(struct test));

}

1. I) Write a program to calculate the factorial of a number using recursive function.

II) What is the below program, what does the function factTR do?

int factTR(int n,int v)

{

if (n==0) return v;

factTR(n-1,n\*v);

}

main()

{

printf("%d",factTR(5,1));

}

1. What is the output of the following program

#include<stdio.h>

int cod(int n)

{

static int cnt=0;

if (n==0) return cnt;

cnt++;

cod(n/10);

}

int pw(int x,int n)

{ if(n==0) return 1;

if (n==1) return x;

return(x\*pw(x,n-1));

}

main()

{

printf("%d %d",cod(0),pw(2,0));

}

1. Write a program to generate Fibonacci series using recursive function.
2. Write a program to write the contents of the character array (“This is my first C lab”) into a file. And display the contents of the file.
3. Print the number from n to 0 using recursive function.