Assignment=10

Function programs in c.

1. Write a function to calculate the area of a circle. (TSRS)

```
#include <stdio.h>
float area(float);
int main()
{
  float b,x;
        printf("\n Enter the Number For Finding The Area Of Circle");
        scanf("%f",&x);
        b=area(x);
        printf("Area of circle is %.3f",b);
}
float area(float a)
{
        float d;
        d=3.14*a*a;
        return d;
}
```

2. Write a function to calculate simple interest. (TSRS)

```
#include <stdio.h>
float interest(int,int,float);
int main()
{
        int x,y;
        float s,z;
        printf("\nEnter the principal amount time rate and interest :");
        scanf("%d%d%f",&x,&y,&z);
   s=interest(x,y,z);
        printf("%.3f",s);
}
float interest(int a,int b,float c)
{
          float x,y;
          x=(a*b*c) /(100);
          y=(float)a+x;
          return y;
}
```

3. Write a function to check whether a given number is even or odd. Return 1 if the number is even, otherwise return 0. (TSRS).

```
#include <stdio.h>
int even(int);
int main()
{
        int a;
        printf("\nEnter Number : ");
        scanf("%d",&a);
        printf("%d",even(a));
        return 0;
}
int even(int x)
{
        if(x%2)
        return 0;
        else
        return 1;
}
```

4. Write a function to print first N natural numbers (TSRN)

```
#include <stdio.h>
void natural(int);
int main()
{
        int x;
        printf("\nEnter The Number : ");
        scanf("%d",&x);
        natural(x);
        return 0;
}
void natural(int a)
{
        int i;
        for(i=1;i<=a;i++)
        printf("\n%d",i);
}
```

5.Write a function to print the first odd natural number(TSRN).

```
#include <stdio.h>
void odd(int);
int main()
{
        int x;
        printf("\n Enter The Number : ");
        scanf("%d",&x);
        odd(x);
```

```
   return 0;
}
void odd(int a)
{
        int i;
        for(i=1;i<=a;i++)
        printf("\n%d",2*i-1);
}
```

6. write a program to calculate the factorial of a given number.(TSRS)

```
#include <stdio.h>
int fact(int);
int main()
{
        int x,s;
        printf("\nEnter the Number For find The Factorial : ");
        scanf("%d",&x);
        s=fact(x);
        printf("Factorial of %d is %d ",x,s);
        return 0;
}
int fact(int a)
{
        int i,sum=1;
        for(i=1;i<=a;i++)
        sum=sum*i;
        return sum;
}
```

7.write a function to calculate the number of combinations one can make from n items and r selected at a time (TSRS)

```
#include <stdio.h>
int comb(int,int);
int main()
{
        int x,y;
        printf("\nEnter the Number : ");
        scanf("%d",&x);
        printf("Enter selected Lines : ");
        scanf("%d",&y);
        printf("%d",comb(x,y));
        return 0;
 }
 int comb(int a ,int b)
 {
```

```
        if(a>b)
        {
        int c=1,i,m,j,sum=1,l=1,k;
        for(i=1;i<=a;i++)
          sum=sum*i;
        for(j=1;j<=a-b;j++)
         c=c*j;
         for(m=1;m<=b;m++)
         l=l*m;
         k= (sum) /(c*l);
         return k;
  }
  else
  return 0;
 }
```

8.write a function to calculate the number of arrangements one can make from n items and the selected line at a time.(TSRS)

```
#include <stdio.h>
int arrange(int,int);
int main()
{
        int x,y;
        printf("\nEnter Number : ");
        scanf("%d",&x);
        printf("Enter selected Lines : ");
        scanf("%d",&y);
        arrange(x,y);
        printf("%d",arrange(x,y));
        return 0;
}
int arrange(int a,int b)
{
   int i,sum=1,c=1,s;
   if(a>b)
   {
        for(i=1;i<=a;i++)
                sum=sum+i;
        for(i=1;i<=b;i++)
           c=c*i;
          s=sum/c;
          return s;
        }
        else
        return 0;
}
```

9.write a function to check weather a given number contains a digit or not (TSRS)

```
#include <stdio.h>
int number(int,int);
int main()
{
        int x,y,s;
        printf("\nEnter The Number : ");
        scanf("%d",&x);
        printf("Enter The Digit : ");
        scanf("%d",&y);
        s=number(x,y);
        if(s==y)
        printf("\nYes Contaning digit");
        else
        printf("\nnot contaning  digit");
        return 0;
}
int number(int a,int b)
{
        int x;
        while(a)
        {
          x=a%10;
                if(x==b)
                {
                 break;
           }
           a=a/10;
        }
        return x;
}
```

10. write a function to print all prime factor of a given number for e.g. if the number is 36 then your result should be 2,2,3,3 (TSRN).

```
#include <stdio.h>
void prime(int);
int main()
{
        int x;
        while(1)
        {

printf("\n\n*********************************************************************************");
        printf("\nEnter The Number : ");
```

```
        scanf("%d",&x);
        prime(x);
   }
        return 0;
}
void prime(int a)
{
        int x,i;
        for(i=2;i<=a;i++)
        {
                if(i==2)
                {
                        while(a)
                        {
                          if(a%i==0)
                          {
                          printf("\n%d",i);
                          a=a/2;
                     }
                          else
                          break;
                        }
                }
                else if(a%i==0)
                {
                        while(a)
                        {
                                if(a%i==0)
                                {
                                printf("\n%d",i);
                                        a=a/i;
                                }
                                else
                                break;
                        }
                }
        }
}
```