Functions in C Language

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

```
#include <stdio.h>
float area(float a);
int main()
{
   float a;
   printf("enter radius: ");
   scanf("%f",&a);
   printf("area of circle is %f sq unit",area(a));
}
float area(float a)
{
   return 3.14 * a * a;
}
```

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

```
#include<stdio.h>
float si(float a,float r,float t);
int main()
{
    float a,r,t;
   printf("enter amount rate and time(in year)  respectively: ");
   scanf("%f %f %f",&a,&r,&t);
   printf("interest after %f time is",si(a,r,t));
}
float si(float a,float r,float t)
{
   return( a*r*t/100);

}
```

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 odd_even(int a);
int main()
{
   int a;
   printf("enter number: ");
   scanf("%d",&a);
   printf("%d",odd_even(a));
   return 0;
}

int odd_even(int a)
{
   if(a%2==0)
   return 1;
   return 0;
}
```

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

```
#include<stdio.h>
void nat(int n)
{
  int i=1;
  while(i<=n)
  {
   printf("%d ",i);
   i++;
  }
}
int main()
{
   int a;
   printf("enter any number: ");
   scanf("%d",&a);
   nat(a);
   return 0;
}
```

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

```
void odd_nat(int a);

#include<stdio.h>
int main()
{
   int a;
   printf("enter number: ");
   scanf("%d",&a);
   odd_nat(a);
```

```
}
void odd_nat(int a){
   for(int i=1;i<=a;i++)
   {
      printf("%d ",i*2-1);
   }
}
```

6. Write a function to calculate the factorial of a number. (TSRS)

```
#include<stdio.h>
int factorial(int a);
int main()
{
   int a;
   printf("enter any number: ");
   scanf("%d",&a);
   printf("%d",factorial(a));
   return 0;
}
int factorial(int a)
{
   int fact=1;
   for(int i=1;i<=a;i++)
   {
      fact=fact*i;
   }
   return(fact);
}
```

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 ncr(int a,int b);

int main()
{
int a,b;
printf("enter value of n and c: ");
scanf("%d %d",&a,&b);
printf(" %d ",ncr(a,b));
}

int ncr(int a, int b)
{
   int x=1,y=1,z=1;

   for(int i=1;i<=a;i++)
   x=x*i;

   for(int i=1;i<=b;i++)
   y=y*i;

   for(int i=1;i<=(a-b);i++)
   z=z*i;

  // printf("%d %d %d",x,y,z);

   return (x/(y*z));
}
```

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

```
#include<stdio.h>
int npr(int a,int b);

int main()
{
int a,b;
printf("enter value of n and c: ");
scanf("%d %d",&a,&b);
printf(" %d ",npr(a,b));
}

int npr(int a, int b)
{
   int x=1,z=1;

   for(int i=1;i<=a;i++)
   x=x*i;


   for(int i=1;i<=(a-b);i++)
   z=z*i;

  // printf("%d %d %d",x,y,z);

   return (x/z);
}
```

9. Write a function to check whether a given number contains a given digit or not.

(TSRS)

```
#include<stdio.h>
int check(int a,int b)
{
while(a>0){
if(a%10==b)
{
   return 1;
}
a=a/10;
}
return 0;
}
int main()
{
   int a,b;
   printf("enter any number and one digit: ");
   scanf("%d %d",&a,&b);
   if(check(a,b))
   printf("given digit is present in given number");
   else
   printf("given digit is not present in given number");
   return 0;
}
```

10. Write a function to print all prime factors of a given number. For example, if the number is 36 then your result should be 2, 2, 3, 3. (TSRN)

```
#include<stdio.h>
void prime_factor(int a);
int main()
{
   int a;
   printf("enter any number: ");
   scanf("%d",&a);
   prime_factor(a);

}
void prime_factor(int a)
{
   int i=2;
   while(a!=1)
   {

      if(a%i==0)
      {
         printf("%d ",i);
         a=a/i;
      }
      else
         i++;
   }
}
```