Assignment-10 Function in C Language

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

```
#include<stdio.h>
float areaCircle(float); //declaration of function
int main()
{
  float A, r;
  printf("Enter radius of circle:");
  scanf("%f",&r);
  A = areaCircle(r); // call the function
  printf("Area of circle is %f", A);
  return 0;
}
float areaCircle(float r) //define the function
{
  return 3.14*r*r;
}
```

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

```
#include<stdio.h>
int simpleInterest(int,int,int);
int main()
{
  int p=2000, IR=2, T=5;
  int SI = simpleInterest(p,IR,T);
  printf("Simple Interest is %d", SI);
  return 0;
}
int simpleInterest(int a, int b, int c)
{
  return (a*b*c)/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 check(int a)
{
if(a%2==0)
    return 1;
else
    return 0;
}
```

```
int main()
{ int n;
  scanf("%d",&n);
  int result = check(n);
  printf("%d", result);
  return 0;
}
```

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

```
#include<stdio.h>
void printN(int);
int main()
{
int n;
scanf("%d",&n);
printN(n);
return 0;
}
```

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

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

```
#include<stdio.h>
void oddN(int);
int main()
{
int n;
scanf("%d",&n);
oddN(n);
return 0;
}
```

```
void oddN(int a)
{
int i;
for(i=0; i<a; i++)
    printf("%d ", 2*i+1);
}
```

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

```
#include<stdio.h>
int fact(int a)
{
int b=1, i;
for(i=1; i<=a; i++)
    b*=i;
return b;
}
```

```
int main()
{
int n;
scanf("%d",&n);
int result = fact(n);
printf("Factorial of %d is %d", n, result);
return 0;
}
```

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 combination(int n, int r)
{
int result = fact(n)/(fact(r)*fact(n-r)); // fact(n) function already defined above
return result;
}
int main()
{
int n, r;
scanf("%d %d",&n,&r);
int result = combination(n,r);
printf("C(%d,%d) = %d", n, r, result); return 0; }
```

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

```
#include<stdio.h>
int fact(int a)
{
  int b=1;
  for(int i=1;i<=a;i++)
      b*=i;
  return b;
}
int permutation(int n, int r)
{ int result;
  if(n>=r)
  result = fact(n)/fact(n-r);
  return result;
}
int main()
{
 int n,r,result;
 scanf("%d %d",&n,&r);
 if(n>=r)
 {
   result=permutation(n,r);
   printf("%d",result);
 }
 else
   printf("Must be n>=r");
 return 0;
}
```

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

```
#include<stdio.h>
int search(int n, int digit)
{ int rem;
  while(n)
  {
    rem = n%10;
    if(rem==digit)
      return 1;
    n=n/10;
  }
  return 0;
}
int main()
{ int num=274278, digit 9;
  int result = search(num,digit);
  if(result == 1)
    printf("Found");
  else
    printf("Not found");
  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 primefact(int n)
{ for(int i=2; n!=1 ;i++)
  {
    while(n%i==0)
    {
      n=n/i;
      printf("%d",i);
    }
  }
}
```

```
int main()
{ int n;
  scanf("%d", &n);
  printf(n);
  return 0;
}
```