Functions in C Language
Assignmrnt-10
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1.Write a function to calculate the area of a circle. (TSRS).

Ans:-

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

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

Ans:-

```
#include<stdio.h>
float simpleint(int,int,int);
int main()
{
   int p,r,t;
   printf("Enter the principle amount, interest rate and period ");
   scanf("%d%d%d",&p,&r,&t);
   printf("Simple interest is =%f",simpleint(p,r,t));
   return 0;
}
float simpleint(int p,int r,int t)
{
   return p*r*t/100.0;
}
```

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).

Ans:-

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

```
   if(even_odd(a))
      printf("Even number");
   else
      printf("Odd number");
   return 0;
}
int even_odd(int x)
{
   if(x%2)
      return 0;
   return 1;
}
```

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

Ans:-

```
#include<stdio.h>
void printN(int);
int main()
{
   int a;
   printf("Enter a number ");
   scanf("%d",&a);
   printN(a);
   return 0;
}
void printN(int x)
{
    int i;
    for(i=1;i<=x;i++)
      printf("%d ",i);
}
```

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

Ans:-

```
#include<stdio.h>
void printOddN(int);
int main()
{
   int a;
   printf("Enter a number ");
   scanf("%d",&a);
   printOddN(a);
   return 0;
}
void printOddN(int x)
{
    int i;
    for(i=1;i<=x;i++)
      printf("%d ",2*i-1);
```

```
}
```

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

Ans:-

```
#include<stdio.h>
int factN(int);
int main()
{
   int a;
   printf("Enter a number ");
   scanf("%d",&a);
   printf("factorial=%d",factN(a));
   return 0;
}
int factN(int x)
{
    int i=1;
    while(x)
    {
       i=i*x--;
    }
    return i;
}
```

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

Ans:-

```
#include<stdio.h>
int factN(int);
int combination(int ,int);
int main()
{
   int n,r;
   printf("Enter the value of n and r ");
   scanf("%d%d",&n,&r);
   printf("Number of combination is =%d",combination(n,r));
   return 0;
}
int factN(int x)
{
    int i=1;
    while(x)
    {
       i=i*x--;
    }
    return i;
}
int combination(int n,int r)
{
```

```
   return factN(n)/factN(r)/factN(n-r);
}
```

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

Ans:-

```
#include<stdio.h>
int factN(int);
int permutation(int ,int);
int main()
{
   int n,r;
   printf("Enter the value of n and r ");
   scanf("%d%d",&n,&r);
   printf("Number of arrangement is =%d",permutation(n,r));
   return 0;
}
int factN(int x)
{
    int i=1;
    while(x)
    {
       i=i*x--;
    }
    return i;
}
int permutation(int n,int r)
{
   return factN(n)/factN(n-r);
}
```

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

Ans:-

```
#include<stdio.h>
int chech_digit(int,int);
int main()
{
   int a,b;
   printf("Enter a number and a digit ");
   scanf("%d%d",&a,&b);
   if(chech_digit(a,b))
      printf("%d contain %d",a,b);
   else
      printf("%d not contain %d",a,b);
   return 0;
}
int chech_digit(int x,int y)
{
```

```
   int rem;
   for(rem=0;x;x/=10)
   {
      rem=x%10;
      if(rem==y)
         return 1;
   }
   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)

Ans:-

```
#include<stdio.h>
void printprimef(int);
int main()
{
   int a;
   printf("Enter a number ");
   scanf("%d",&a);
   printprimef(a);
   return 0;
}
void printprimef(int x)
{
   int i,j;
   for(i=2;x>1;)
   {
       if(x%i==0)
       {
          printf("%d ",i);
          x/=i;
       }
       else
         i++;
   }
}
```