Assignment - 12

1. Write a recursive function to print first N natural numbers

```
#include<stdio.h>

void printN(int);
int main()
{
   int k;
   printf("Enter the number = ");
   scanf("%d",&k);
   printf("Natural Number : \n");

   printN(k);
   return 0;
}
void printN(int a)
{
   if(a>0)
   {
      printN(a-1);
      printf("%d\n",a);
   }
}
```

2. Write a recursive function to print first N natural numbers in reverse order

```
#include<stdio.h>

void printN(int);
int main()
{
   int k;
```

```
    printf("Enter the number = ");
    scanf("%d",&k);
    printf("Reverse Natural Number : \n");

    printN(k);
    return 0;
}
void printN(int a)
{
    if(a>0)
    {
        printf("%d\n",a);
        printN(a-1);
    }
}
```

3. Write a recursive function to print first N odd natural numbers

```
                #include<stdio.h>
void printOddN(int);
int main()
{
    int k;
    printf("Enter the number = ");
    scanf("%d",&k);

    printf("Odd natural number in Reverse order :\n");
    printOddN(k);
}
void printOddN(int n)
{
    if(n>0)
    {
        if(n%2!=0)
        {
```

```
            printf("%d\n",n);

        }
        printOddN(n-1);
    }
}
```

4. Write a recursive function to print first N odd natural numbers in reverse order

```
                #include<stdio.h>
void printOddN(int);
int main()
{
    int k;
    printf("Enter the number = ");
    scanf("%d",&k);

    printf("Odd natural number :\n");
    printOddN(k);
}
void printOddN(int n)
{
    if(n>0)
    {
        printOddN(n-1);
        if(n%2!=0)
        {
          printf("%d\n",n);
        }
    }
}
```

5. Write a recursive function to print first N even natural numbers

```
#include<stdio.h>

void printEvenN(int);
int main()
{
    int k;
    printf("Enter the number = ");
    scanf("%d",&k);

    printf("Even Natural number :\n");
    printEvenN(k);
    return 0;
}
void printEvenN(int n)
{
    if(n>0)
    {
        printEvenN(n-1);
        if(n%2==0)
            printf("%d\n",n);
    }
}
```

6. Write a recursive function to print first N even natural numbers in reverse order

```
#include<stdio.h>

void printEvenN(int);
int main()
{
    int k;
    printf("Enter the number = ");
```

```
    scanf("%d",&k);

    printf("Even natural number in reverse order :\n");
    printEvenN(k);
    return 0;
}
void printEvenN(int n)
{
    if(n>0)
    {
        if(n%2==0)
            printf("%d\n",n);
    }
    printEvenN(n-1);
}
```

7. Write a recursive function to print squares of first N natural numbers

```
                #include<stdio.h>
void printSquareN(int);
int main()
{
    int k;
    printf("Enter the number = ");
    scanf("%d",&k);

    printf("Square is :\n");
    printSquareN(k);
    return 0;
}
void printSquareN(int n)
{
    if(n>0)
    {
        printSquareN(n-1);
```

```
        printf("%d\n",n*n);
    }
}
```

8. Write a recursive function to print binary of a given decimal number

```
                #include<stdio.h>
void binary(int);
int main()
{
    int x;
    printf("Enter the number = ");
    scanf("%d",&x);
    binary(x);
    return 0;
}
void binary(int n)
{
    if(n==0)
        return;
    binary(n>>1);
    printf("%d",n&1);
}
```

9. Write a recursive function to print octal of a given decimal number

```
                #include<stdio.h>
void octal(int);
int main()
{
    int x;
    printf("Enter the number = ");
    scanf("%d",&x);
    octal(x);
    return 0;
```

```
}
void octal(int n)
{
    if(n==0)
        return;
    octal(n/8);
    printf("%d",n%8);
}
```

10. Write a recursive function to print reverse of a given number

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

    reverse(x);
}
void reverse(int n)
{
    int rev = 0,rem;
    while (n != 0)
        {
            rem = n % 10;
            rev = rev * 10 + rem;
            n /= 10;
        }

  printf("Reversed number = %d", rev);
}
```