Assignment-7

Code:

```c
// Q21. Write a C program to generate fibonacci numbers and to find out if a
given number is a fibonacci number or not.

#include <stdio.h>
int main()
{
    int n,c=0,t;
    printf("Enter Number of terms of Fibonacci Series: ");
    scanf("%d",&t);
    int A[t];
    A[0]=0,A[1]=1;
    for (int i=2;i<t;i++)
        A[i] = A[i-1]+A[i-2];
    printf("Fibonacci Series: ");
    for (int i=0;i<t;i++)
        printf("%d ",A[i]);
    printf("\nEnter Number to Search in fibonacci Series: ");
    scanf("%d",&n);
    for (int i=0;i<t;i++)
    {
        if (n == A[i])
        {
            printf("%d is a Fibonacci Number.",n);
            c++;
            break;
        }
    }
    if (c == 0)
        printf("%d is not a Fibonacci Number.",n);
    return 0;
}
```

Output:

```
Enter Number of terms of Fibonacci Series: 14
Fibonacci Series: 0 1 1 2 3 5 8 13 21 34 55 89 144 233
Enter Number to Search in fibonacci Series: 143
143 is not a Fibonacci Number.
```

Code:

```c
// Q22. Write C programs to check, if an integer is a power of 2 or not in a
single line.

#include <stdio.h>
int main()
{
    int n;
    printf("Enter Number: ");
    scanf("%d",&n);
    printf("%d is %s a power if 2.\n",n,(n>0 && (n & (n-1)) == 0 ) ? "" :
    "not" );
    return 0;
}
```

Output:

```
Enter Number: 32
32 is  a power if 2.
```

```
Enter Number: 126
126 is not a power if 2.
```

Code:

```c
// Q23. Write code to remove duplicates in a sorted array.

#include <stdio.h>
int main()
{
    int A[] = {1,2,3,3,4,4,5,6,7,7}; //Sorted Array (increasing order)
    printf("Array before removing duplicates is: ");
    for (int i=0;i<10;i++)
        printf("%d ",A[i]);
    for (int i=0;i<10;i++)
    {
        for (int j=i+1;j<10;j++)
        {
            if (A[i] == A[j])
                A[j]=0;
        }
    }
    printf("\nArray after removing duplicates is: ");
    for (int i=0;i<10;i++)
    {
        if (A[i] != 0)
            printf("%d ",A[i]);
    }
}
```

Output:

```
Array before removing duplicates is: 1 2 3 3 4 4 5 6 7 7
Array after removing duplicates is: 1 2 3 4 5 6 7
```

Code:

```c
// Q25. Write C code to return a string from a function.
#include <stdio.h>
#include <string.h>
int function_string(char str[],int size)
{
    printf("Enter String: ");
    fgets(str,size,stdin);
}
int main()
{
    char str[100];
    function_string(str,sizeof(str));
    printf("Returned String is: %s",str);
}
```

Output:

```
Enter String: Let us C!!
Returned String is: Let us C!!
```