

COMPUTER NETWORKS

LAB OBSERVATION Shashank M S – 1BM21CS201

Question: Write a program for error detecting code using CRC-CCITT (16-bits).

Code:

```
#include<stdio.h>

int arr[17];

void xor(int x[], int y[])
{
    int k=0;
    for(int i=1;i<16;i++)
    {
        if(x[i]==y[i])
            arr[k++]=0;
        else
            arr[i]=1;
    }
}

void main()
{
    int dd[17],div[33],ze[17],i,k;

    printf("Enter the dataword \n");
}
```

```
for(i=0;i<17;i++)
    scanf("%d",&div[i]);
for(i=i;i<33;i++)
    div[i]=0;

for(i=0;i<17;i++)
    ze[i]=0;
printf("Enter dividend \n");
for(i=0;i<17;i++)
    scanf("%d",&dd[i]);

i=0;
k=0;
for(i=i;i<17;i++)
    arr[k++]=div[i];
while(i<33)
{
    if(arr[0]==0)
        xor(arr,ze);
    else
        xor(arr,dd);

    arr[16]=div[i++];
}

k=0;
for(i=17;i<33;i++)div[i]=arr[k++];
}
```

```

printf("Codeword: ");

for(i=0;i<33;i++)
    printf("%d",div[i]);

for(i=0;i<17;i++)
    arr[i]=0;

printf("\nAt receiver end \n");

k=0;
for(i=i;i<17;i++)
    arr[k++]=div[i];
while(i<33)
{
    if(arr[0]==0)
        xor(arr,ze);
    else
        xor(arr,dd);

    arr[16]=div[i++];
}

k=0;
for(i=17;i<33;i++)div[i]=arr[k++];
printf("Codeword: ");
for(i=0;i<33;i++)
    printf("%d",div[i]);
}

```

Output:

```
Enter the dataword
1 0 1 1 0 0 1 1 1 0 0 1 0 1 1 1
Enter dividend
1 0 0 0 1 0 0 0 0 1 0 0 0 1 1
Codeword: 1011001111001011100000000000011011
At receiver end
Codeword: 10110011110010111000000000000000000000
Process returned 1 (0x1) execution time : 49.507 s
Press any key to continue.
```