WEEK 13

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]);
}</pre>
```

OUTPUT:

```
C:\Users\Admin\Desktop\1BM21CS047\ADA\CRC16\bin\Debug\CRC16.exe

Enter the dataword

1 0 1 1 0 0 1 1 1 1 0 0 1 0 1 1 1

Enter dividend

1 0 0 1 0 0 0 0 0 1 0 0 0 1 1

Codeword: 10110011110010111000000000011011

At receiver end

Codeword: 101100111100101110000000000000000000

Process returned 1 (0x1) execution time: 49.507 s

Press any key to continue.
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OBSERVATION:

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| | Enter drugger: 1000100000000001 |
| | Dates being sent: 1110100101110001 |
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