```
Enter new data
1011
CRC-16?(y/n): y

Menu:
1. Find final codeword(Sender's Side)
2. Check The Code word(Receiver's Side)
3. Enter diffrenet values
4. EXIT
Enter your choice: 1

Generating polynomial: 1100000000000101
Modified data is: 1011100000000111001
Remainder is: 100000000111001
Final codeword is : 1011100000000111001

Menu:
1. Find final codeword(Sender's Side)
2. Check The Code word(Receiver's Side)
3. Enter diffrenet values
4. EXIT
Enter your choice: 2
Enter the recieved data on recievers side1011100000000111001

Remainder is:000000000000000
Therefor,
Data doesnt have any errors.

Menu:
1. Find final codeword(Sender's Side)
2. Check The Code word(Receiver's Side)
3. Enter diffrenet values
4. EXIT
Enter your choice: 2
Enter the recieved data on recievers side1011100000000111000

Remainder is:000000000000001
Therefor,
Data has errors.

Menu:
1. Find final codeword(Sender's Side)
2. Check The Code word(Receiver's Side)
3. Enter diffrenet values
4. EXIT
Enter your choice: 4
```

Question 1

Question 4(below)

Question 8

```
Enter two prime numbers:3 11
Enter the messsage:31
Message data =31
p = 3
q = 11
n = pq = 33
phi(n) = 20
e = 3
d = 7
Encrypted data = 25
Decrypted data (from encrypted)=31
Press any key to continue . . .
```

```
Enter no of vertices:5
Enter the cost adjacency matrix(Enter 999 for not connnected)
999 10 999 30 100
10 999 50 999 999
999 50 999 20 10
30 999 20 999 60
100 999 10 60 999

Enter the source node(1 indexed):1

Shortest path from 1 to 2 is 10
Shortest Path=2<-1
Shortest path from 1 to 3 is 50
Shortest Path=3<-4<-1
Shortest path from 1 to 4 is 30
Shortest Path=4<-1
Shortest path from 1 to 5 is 60
Shortest Path=5<-3<-4<-1
Press any key to continue . . .
```

Question 3

```
Enter the number of nodes : 4

Enter the cost matrix :
0 3 5 99
3 0 99 1
5 4 0 2
99 1 2 0


 For router 1

Node 1 via 1 Distance = 0
Node 2 via 2 Distance = 3
Node 3 via 3 Distance = 5
Node 4 via 2 Distance = 4

 For router 2

Node 1 via 1 Distance = 3
Node 2 via 2 Distance = 0
Node 3 via 4 Distance = 3
Node 4 via 4 Distance = 1

 For router 3

Node 1 via 1 Distance = 5
Node 2 via 4 Distance = 3
Node 3 via 3 Distance = 0
Node 4 via 4 Distance = 2

 For router 4

Node 1 via 2 Distance = 4
Node 2 via 2 Distance = 1
Node 3 via 3 Distance = 2
Node 4 via 4 Distance = 0

Press any key to continue . . .
```

Question 5

```
Enter bucket size, outgoing rate and no of inputs: 50 5 5


Enter the incoming packet size : 40
Incoming packet size 40
Bucket buffer size 40 out of 50
After outgoing 35 packets left out of 50 in buffer


Enter the incoming packet size : 45
Incoming packet size 45
DROPPED 30 no of packets
Bucket buffer size 35 out of 50
After outgoing 45 packets left out of 50 in buffer


Enter the incoming packet size : 10
Incoming packet size 10
DROPPED 5 no of packets
Bucket buffer size 45 out of 50
After outgoing 45 packets left out of 50 in buffer


Enter the incoming packet size : 20
Incoming packet size 20
DROPPED 15 no of packets
Bucket buffer size 45 out of 50
After outgoing 45 packets left out of 50 in buffer


Enter the incoming packet size : 5
Incoming packet size 5
Bucket buffer size 50 out of 50
After outgoing 45 packets left out of 50 in buffer
Press any key to continue . . .
```

Question 7

```
Enter a prime number and alpha value(alpha should satisfy the condition)7 3
Xa=41
Ya=5
Xb=18467
Yb=5
A's secret key is 3
B's secret key is 3
Press any key to continue . . .
```