

NAME :- M. USMAN Khan

ID NO :: 15038.

Semester :- 4th Section :- A

Q NO 1

In a block of address we know the IP address of one host is $101.10.11.X/11$. What are the first address and the last address in this block?

ANSWER:

$$ID = 15038$$

$$X = 17$$

$$4^{th} = 3$$

$$5^{th} = 8$$

$$4^{th} + 5^{th} = 11$$

In a block of addresses, we know the IP address is $101.10.11.17/11$

$$101.10.11.17$$

$101.10.0.1 \Rightarrow$ ON host First address.

Network address : $101.10.0.7$

Last Address : $101.10.11.037$

Limited Address : $101.10.11.038$.



Q No 2

Take your Roll no as decimal notation ---
--- level has been positive?

ANSWER:-

Decimal no:- 15038

Converting into binary. (2)

1110101011110

Interval = 1 and transition from low to high in middle of interval = 0 -

No transition at beginning of interval = 1 and transition at beginning of interval -

• In binary digit the last number is 0 so we will change into 1 due to last signal level should be positive.

Binary Conversion

2	15038	
2	7519	0
2	3759	1
2	1879	1
2	939	1
2	469	1
2	234	1
2	117	0
2	58	1
2	29	0
2	14	1
2	7	0
2	3	1
2	1	1



(3)

15038 =

111 01 01 01 111 10

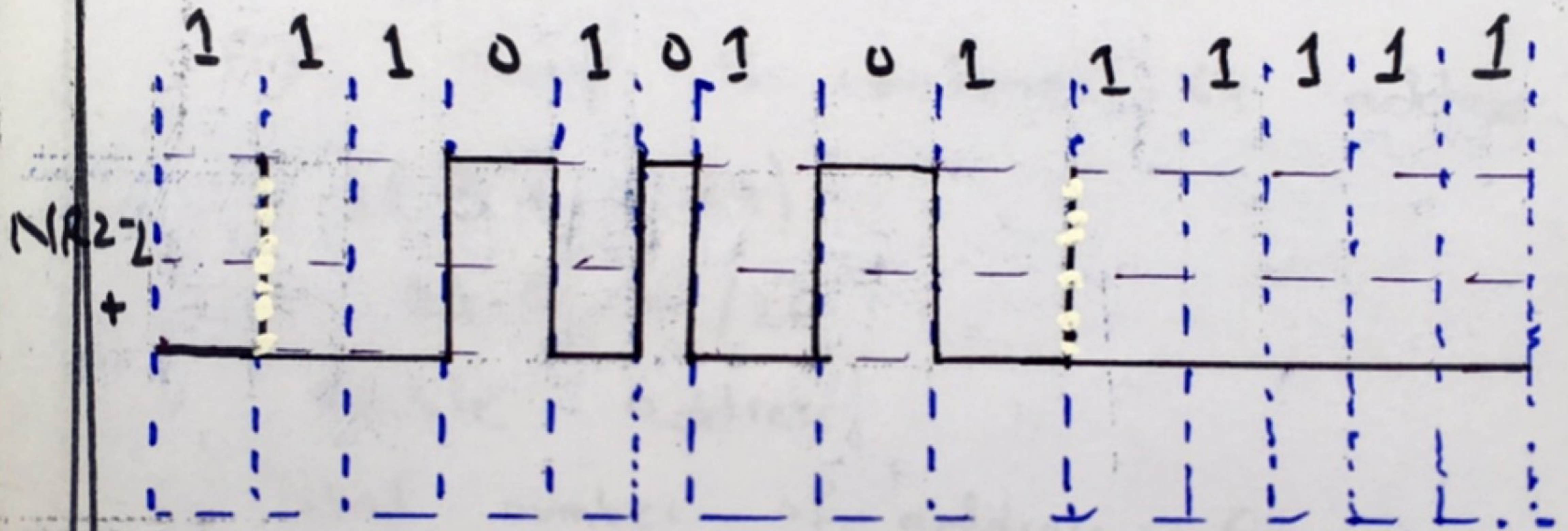
NRZ-L graph:

1110101011110

Now the last digit is 0 so we will change it into 1.

(4)

1110101011111



~ 0 ~ 0

Q20 :- 3

~~Q20~~ ANSWER :-

ID no = 15038

Last digit of ID is greater

than 5 the we will divide the last number.

$$8/2 = 4$$

So window size is 4.

part a :-

Sender :- 0 1 2 3 4 5 6

window of PDU that may be transmitted = 4 bit window

Receiver :-

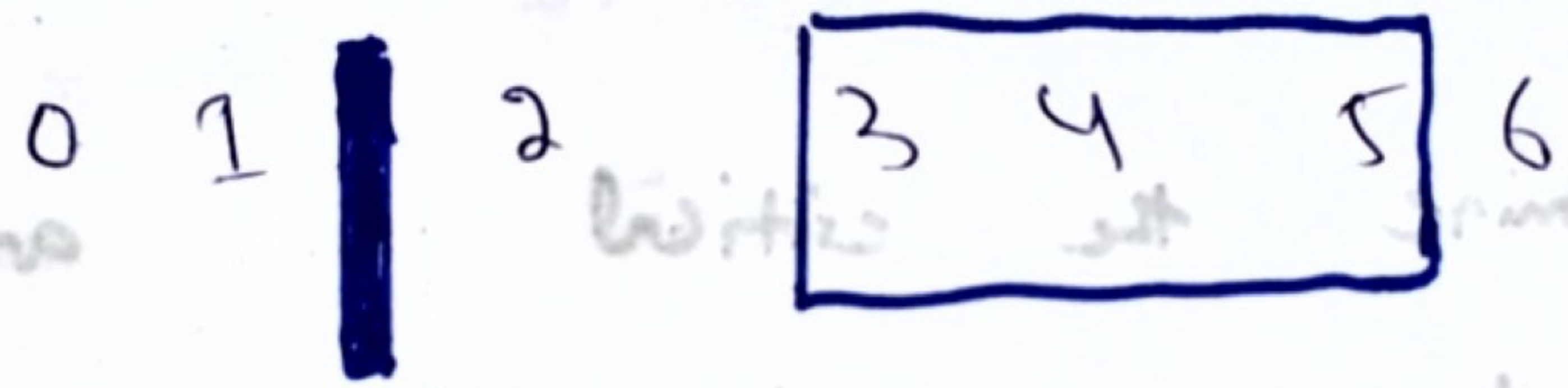
0 1 2 3 4 5 6

Part b:

Sender:

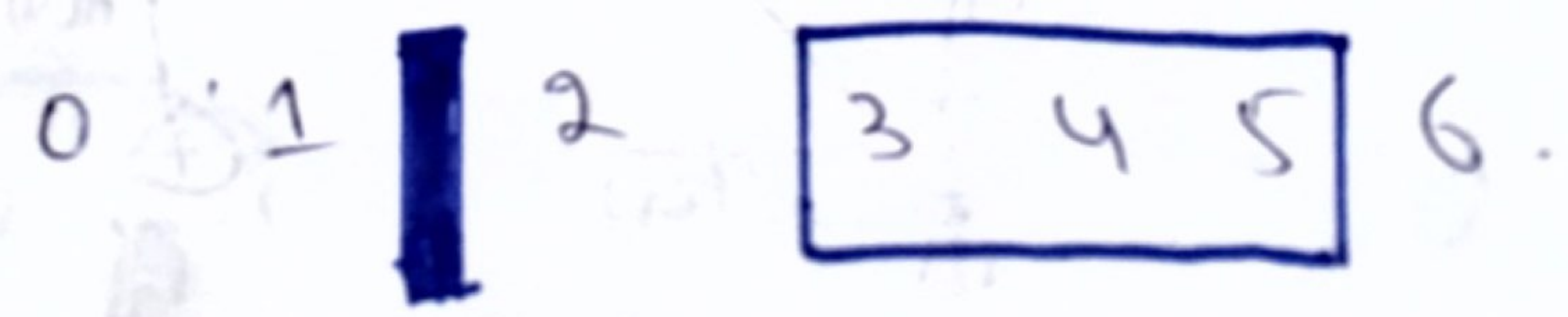
A has shrunk its windows as it has transmitted three PDU's but has received ack for 2 PDU's hence it is keeping copy of one PDU.

(6)



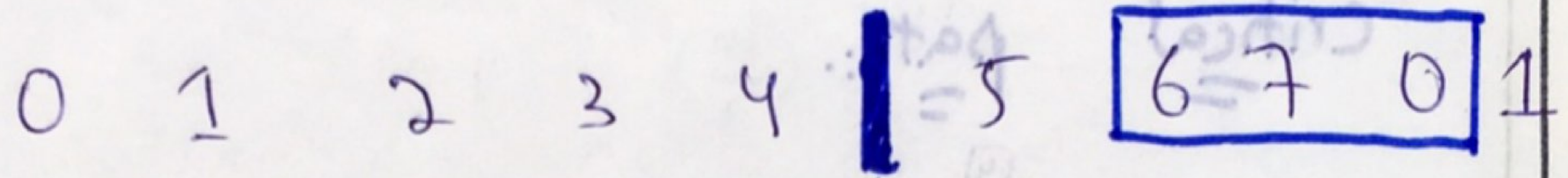
Acknowledge received by 2 bits

Receiver:



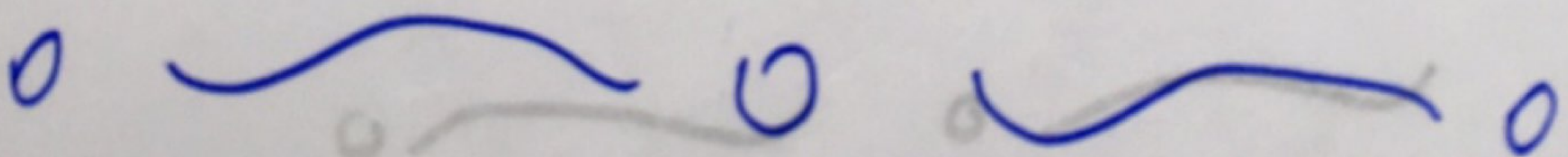
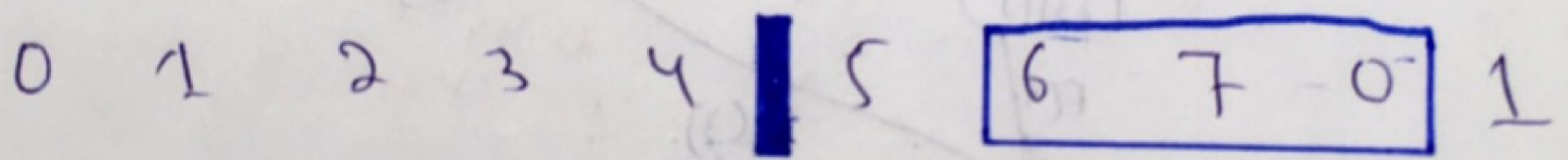
Part C

Sender:



Receiver:

Acknowledgment received for two bits.



QUESTION NO 4:

a) The first group has 16 customers; each needs 64 address;

Answer:-

$$160 \cdot x \cdot 17 \cdot 3 \cdot 0/16$$

(8)

$$160 \cdot 17 \cdot 3 \cdot 0/16$$

First group 16 customer = 64 address

$$1(2^6 = 64)$$

$$32 - 6 = /26$$

usable address

Total number of address : 64

$$\text{mask} : 160 \cdot 23 \cdot 17 \cdot 6/26$$

$$\text{Network id} : 160 \cdot 23 \cdot 17 \cdot 1/26$$

$$160 \cdot 23 \cdot 17 \cdot 1/26$$

$$\text{Last} : 160 \cdot 28 \cdot 17 \cdot 6/26$$

$$\text{Total} : 16 \times 64 = 1024 \text{ available address}$$

$$5 (2^6 = 32)$$

$$32 - 6 = 26$$

Total number of address : 32

$$\text{Mask} : 160.23.17.6/27$$

$$\text{Network} : 160.23.17.0/27$$

$$\text{Last} : 160.28.17.6/27$$

$$\text{Total} : 16 \times 64 = 1024$$

Group C

For this group each customer needs 16 addresses this means that 6 ($\log_2 16$) bits are needed to each host the prefix length is then $32 - 6 = 26$ the addresses are.

$$1^{\text{st}} = 160.23.17.6/28$$

$$2^{\text{nd}} = 160.23.17.1/28$$

$$3^{\text{rd}} = 160.28.17.6/28$$

number of
files
Total = 16 x 64 = 1024

