

Wasim-ur-Rehman

(1)

14524

BS(SE)

Section A 4th Sem

CCN final term

Question no 1 :-

Solution:-

Given:-

Ip address 101.10.11.X/ID₄₊₅

X = is the sum of ID 14524
 $1+4+5+2+4 = 16$

$$x = 16$$

$$ID_{4+5} = 2+4 = 6$$

$$\Rightarrow 101.10.11.\frac{16}{16} \Rightarrow 101.10.11.3$$

$$\Rightarrow 101.10.11.11$$

Now converting them to 8 bits

0000101.0000010.0000011.00000011

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Now by setting the right most 32-28 bits to zero we get

$0000101 \cdot 0000010 \cdot 0000011 \cdot 0000000$

The upper is the first address -

Now the last address in this block is

$0000101 \cdot 0000010 \cdot 0000011 \cdot 0000011$

Now by setting 32-28 right most bits to 1 we get -

$0000101 \cdot 0000010 \cdot 0000011 \cdot 0000111$

Question 2 a-

Solution

Roll no = 14524

converting it to binary notation

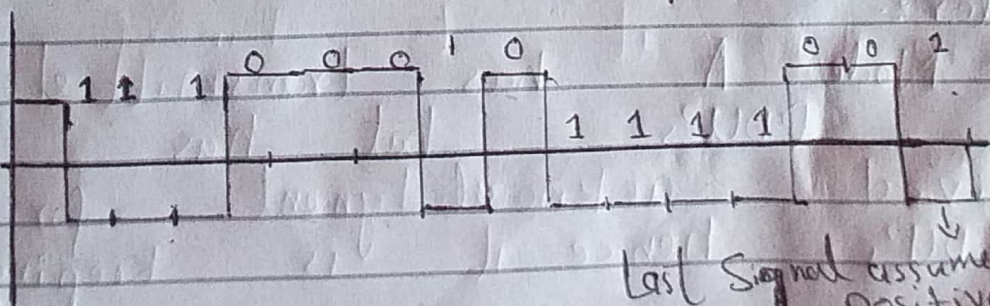
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2	14524	
2	7262	0
2	3631	0
2	1815	1
2	907	1
2	453	1
2	226	1
2	113	0
2	56	1
2	28	0
2	14	0
2	7	0
2	3	1
	1	1

binary of my Id = 111 000 10111 100

NRZ-L Scheme graph



Last signal assumed to be positive -

Question 3 :-

Solution

ID = 14524

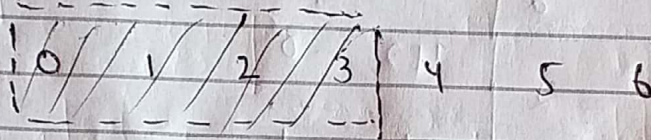
Id last = 4

So window size is "4"

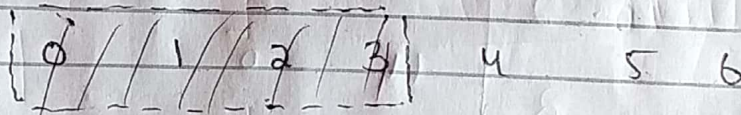
(a) =>

Before node A sends any frame

Sender =>



Receiver =>



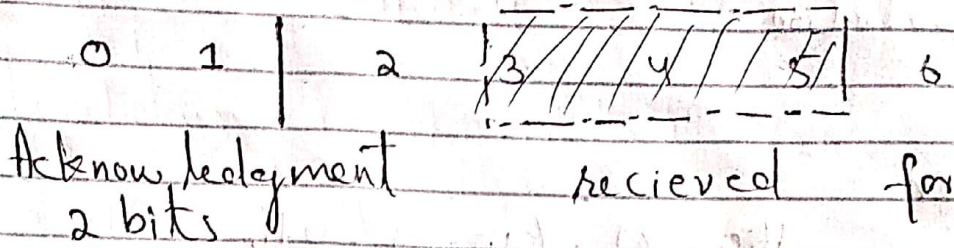
(b)

after node "A" sends frame 0, 1, 2 and receive acknowledgment from B for 0 and 1. here we suppose "B" receive all three frames.

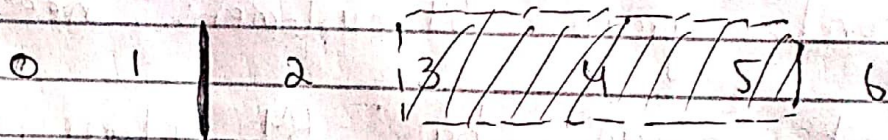
Sender :-

Node A has transmitted three PDU's but has received acknowledgment for 2 PDU's hence it is keeping

copy of on PDU -



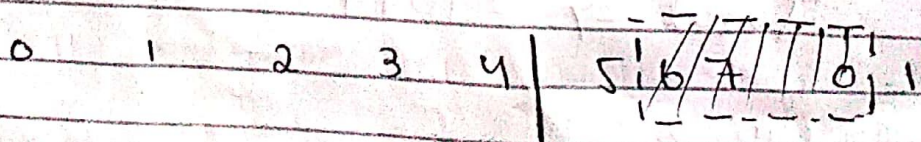
Receiver



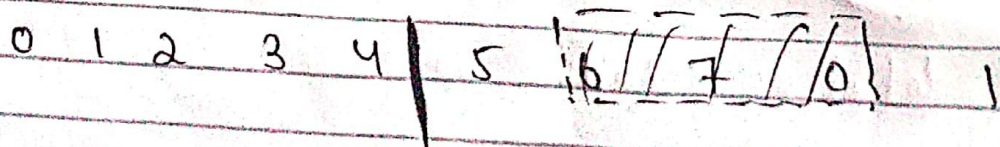
Receiver has received all data hence the window remains in 4 bit size -

(e) After A sends frame 3, 4 and 5 and B acknowledges and the Ack is received by A -

Sender



Receiver



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Question 4 :-

Solution

Given

$$160 \cdot (x) + (ID_{3+4}) \cdot 0.16$$

→ first group 16 customer, need 64

→ second group 64 customers, needs 32

→ third group has 64 customer, need 16

$$(x) ID = 14524$$

$$ID_{3+4} = 7$$

$$\text{So } 160 \cdot 16 \cdot 7 \cdot 0.16 =$$

Group 1 :-

$$\text{customer } 0.1 = 160 \cdot 16 \cdot 7 \cdot 0.28$$

$$\text{customer } 0.16 = 160 \cdot 16 \cdot 22 \cdot 0.28$$

$$\text{Total } \Rightarrow 1024$$

Group 2 :-

$$\text{customer } 0.17 = 160 \cdot 16 \cdot 23 \cdot 0.27$$

$$\text{customer } 0.64 = 160 \cdot 16 \cdot 85 \cdot 0.27$$

$$\text{total} = 2048$$

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Group 3

$$\text{customer 1} = 160 \cdot 16 \cdot 86 \cdot 0/26$$

$$\text{customer 102} = 160 \cdot 16 \cdot 102 \cdot 0/26$$

$$\text{total} = 1024$$

Number of allocated addresses = 4096

Number of available addresses = 3072 -