

Name

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ID

14619

BSc(SE)

4.

Section 'A'

Project

CCN Final term

Date

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Question: 11

Solution:

$$101.10.11.X/ID_{u+s}$$

Now

$$X = 14619$$

$$= 1+4+6+1+9 = 21$$

$$ID_{u+s} = 1+9 = 10$$

$$\Rightarrow 101.10.11.21/10$$

$$\Rightarrow 101.10.11.2.1$$

$$\Rightarrow 101.10.11.10.00$$

Now find the first address

00001010.0000010.00000011.0000010

Now by setting the 32-28 rightmost bits is 08. we get

00001010.0000010.00000011.0000010
↓
00001010.0000010.00000011.0000000

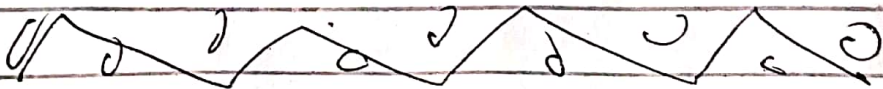
Now for last address.

Now by setting 32-28 rightmost

32-28 bits to 1. we get.

0000101, 0000010, 0000011, 0000010
└──────────┘
↓

0000101, 0000010, 0000011, 0000111



Q2:

Sol:

Roll No: 14619

Now convert into binary

Step 12

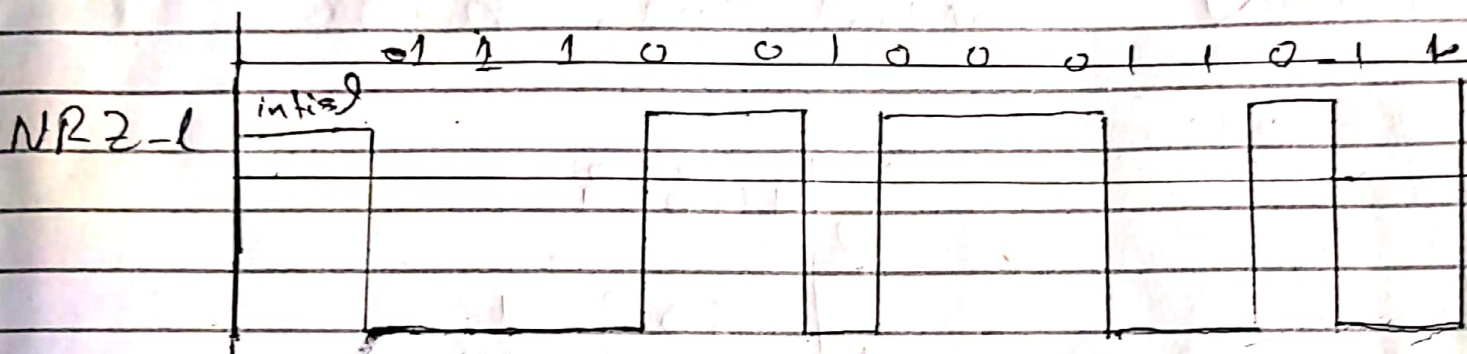
$$\begin{array}{r}
 2 \overline{) 14619} \\
 \underline{2 \ 7309} \quad -1 \\
 2 \ 3654 \quad -1 \\
 \underline{2 \ 1827} \quad -0 \\
 2 \ 913 \quad -1 \\
 \underline{2 \ 456} \quad -1 \\
 2 \ 228 \quad -0 \\
 \underline{2 \ 114} \quad -0 \\
 2 \ 57 \quad -0 \\
 \underline{2 \ 28} \quad -1 \\
 2 \ 14 \quad -1 \\
 \underline{2 \ 7} \quad -0 \\
 2 \ 3 \quad -1 \\
 \underline{2 \ 1} \quad -1
 \end{array}$$

Binary = 1110100011011

Step 2

Now Draw the NRZ-L diagram of the binary data of our 1's.

11100100011011



Step 3.

The last signal level has positive



Q31.

Solution:

$ID = 14619$

$id_{last} = 9$

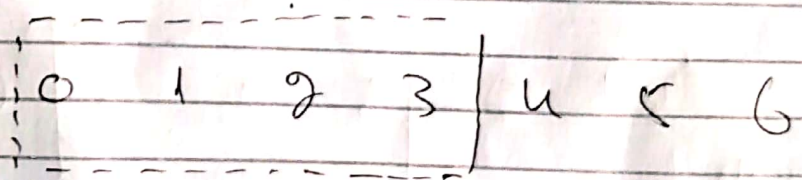
$ID_{last} \text{ is } > 5 \text{ then } 9/2 = 4$

So the window size is "4"

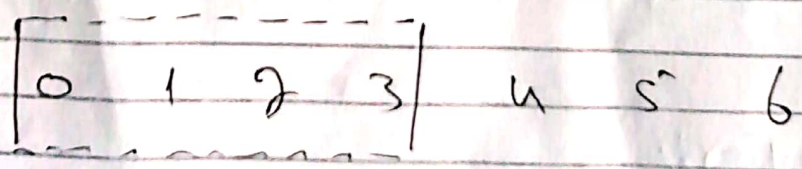
a)

So before node A sends any frames.

Sender =>



Receiver =>



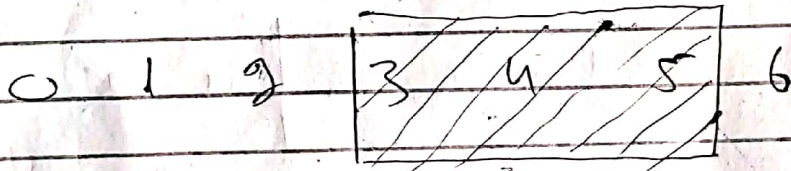
Part (b)

after node 'A' sends frame 0, 1, 2 and receive acknowledgment from B for 0 and 1

(Suppose B received all three frames).

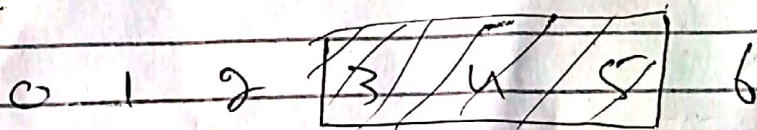
Sender:

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



Acknowledgment received for 2 bits.

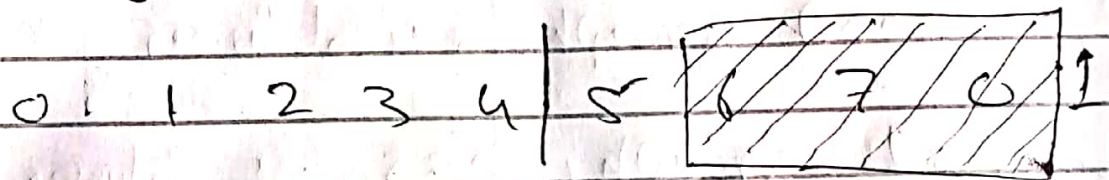
Receiver:



Receiver has received all

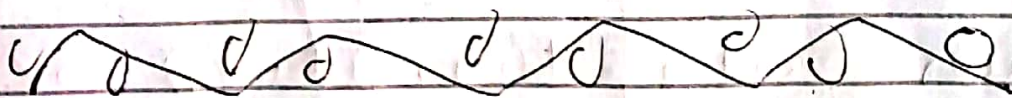
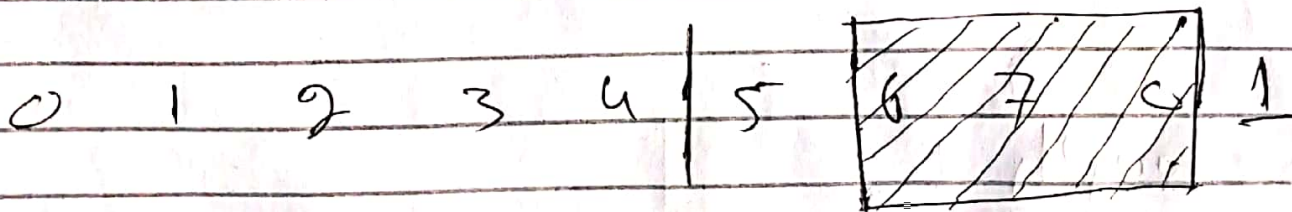
data hence the window remains in w bit size.

Part (c): after A sends frames 3, 4 and 5 and B acknowledges 4 and the ACK is received by Sender.



Receiver:

Acknowledgment received for two bits.



Q 41.

Solution.

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

- a) find group 16 customer, need 64
- b) second group 64 customer, need 32
- c) third group has 64 customer need 16

$$XID = 14619$$

$$ID_{3+4} = 6+1 = 7$$

$$\text{So } 160 \cdot 21 \cdot 7 \cdot 0.16$$

Group 1

$$\text{customer } 001 = 160 \cdot 21 \cdot 7 \cdot 0/28$$

$$\text{customer } 016 = 160 \cdot 21 \cdot 22 \cdot 0/28$$

$$\text{total} \Rightarrow 1024$$

Group 2:

customer 017 = 160.21.23.0/27

customer 064 = 160.21.85.0/27

total = 2048

Group 3:

customer 001 = 160.26.26.0/26

customer 109 = 160.21.102.0/26

total = 1024

Number of allocated address = 4096

Number of available address = 3072

