

Name = Naveed Ahmad  
 ID = 14519  
 Section = "A"  
 Semester = 4th  
 Date = 29/06/2020

Answer = 1

2 First Address:

?

$$\Rightarrow \cancel{101.10.11.20/10}$$

$$\Rightarrow 101.10.11 \times / 1D_{4+5}$$

$$\Rightarrow 1 + 4 + 5 + 1 + 9 = 20$$

$$\Rightarrow 101.10.11.20/10 \quad 1D_{4+5} = 1+9 = 10$$

$$\Rightarrow 101.10.11.2$$

$$\Rightarrow 101.10.11.10$$

Now find the first address.

$$\Rightarrow 00000101.00000010.00000011.00000010$$

Now by setting the 39-28 rightmost bit is 05. then we get.

00000101 00000010 00000011 00000010  
 ↓  
 00000101 00000010 00000011 00000000

Now for last address. By setting 39-28 rightmost 39-28 bit to 1. we get

⇒ 00000101 . 00000010 . 00000011 . 00000010  
 ↓  
 00000101 . 00000010 . 00000011 . 00001111

Answer : 2

Roll no : 14519

Step = 1 Convert into binary.

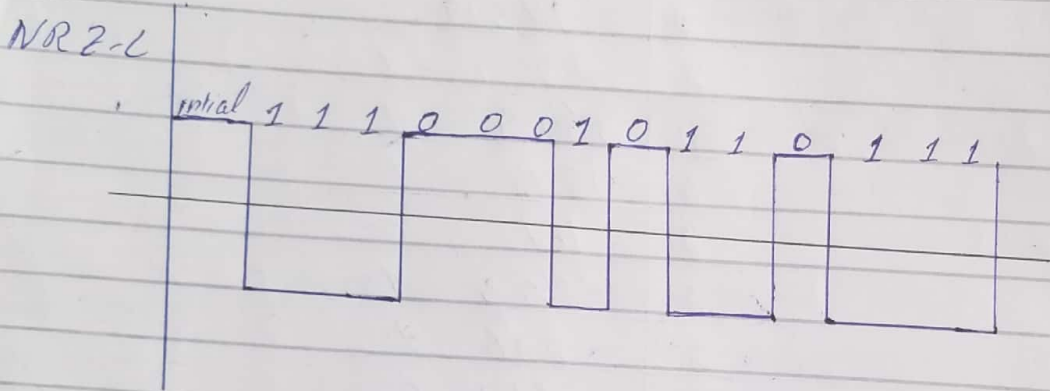
2	14519
2	7259 - 1
2	3629 - 1
2	1814 - 1
2	907 - 0
2	453 - 1
2	226 - 1
2	113 - 0
2	56 - 1
2	28 - 0
2	14 - 0
2	7 - 0
2	3 - 1
	1 - 1

Binary  $\Rightarrow$  11100010110111

Step = 2

Now Draw the NRZ-L Diagram of my binary ID number.

11100010110111



Step = 3

The last signal level has positive.

Part (A)

Answer 3

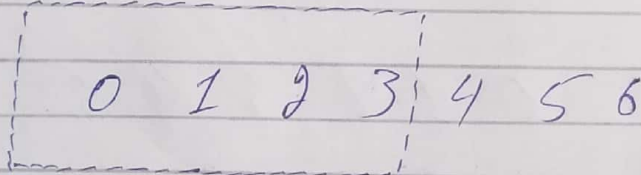
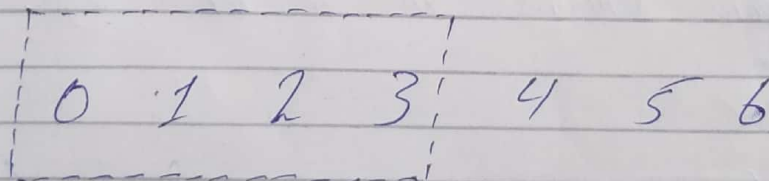
$$ID = 14519$$

$$ID = \text{last}$$

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

So the window size is 4.

So before node A sends any frames.

Sender  $\Rightarrow$ Receiver  $\Rightarrow$ 

Part 'B'

After node 'A' sends from 0, 1, 2  
and receive acknowledgement from  
B for 0 and 1.  
(suppose B receive all three frames).

Sender A

A has shrunk its windows as it has transmitted three PDUS but has received ack for 2 PDUS hence it is keeping copy of 3 and 4 PDUS.

0 1 2 3/4/5 6

Acknowledgment receive for 2 bit.

Receiver B

0 1 2 3/4/5 6

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

Part 'c'

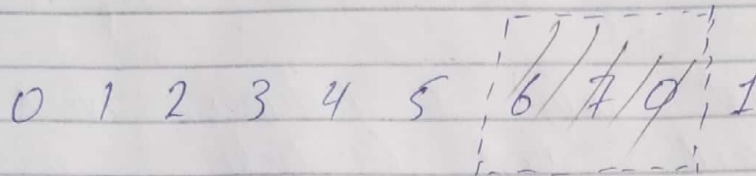
After a send frames 3, 4 and 5 and B acknowledgement 4 and the ACK is received by sender.

Sender A

0 1 2 3 4/5 6 7 0 1

Receiver:  
2

Acknowledgement received for 2 bits.



Answer = 4

$$160 \cdot (x) \cdot (ID_{3+4}) \cdot 016$$

a) = first group 16 Customer, Need 64

b) = Second group 64 Customer, Need 32

c) = Third group has 64 Customer, Need 16

$$XID = 14519$$

$$ID_{3+4} = 6(5+1)$$

$$\text{So } 160 \cdot 21 \cdot 6 \cdot 016$$

Group 1:

$$\text{Customer } 001 = 160 \cdot 21 \cdot 6 \cdot 016 / 28$$

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

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

Group 2:

$$\text{Customer } 017 = 160 \cdot 21 \cdot 23 \cdot 0 / 27$$

$$\text{Customer } 064 = 160 \cdot 21 \cdot 25 \cdot 0 / 27$$

$$\text{Total} \Rightarrow 2048$$



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Group 3 +

Customer 001 = 160.21.86. 0/96

Customer 102 = 160.21.123. 0/96

Total = 1024

Number of allocated address = 4096

Number of available address = 3072.