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4th semester (spring 2020).

Module # Computer Communication

Subject # and Networks

Dept. # BS (SE)

Section # "B"

instructor #

24/06/2020

Date #

Q No 1 :-

Ans :-

$$ID = 15121$$

$$1 + 5 + 1 + 2 + 1 = 10$$

$$\boxed{n = 10}$$

$$5 + 1 = 6$$

hosts IP Address 101.10.11X /ID4+5

my IP Address 101.10.10/6

convert into Binary.

011101100010001

All ones is 6.

So,

Add mask = 6

Now we have to subtract
sum of last digits
from 32 bit.

$$i.e = 32 - 6 = 26$$

⇒ First IP Address :-

$$i.e = 00000000 \ 0000 \ 0000 \ 00000$$

IP Address :-

$$i.e = 101.10.11.0$$

page no (2)

Last IP Address:-

i.e = 1111111 1111 1111 11111

IP Address:-

i.e = 101.10.11.31

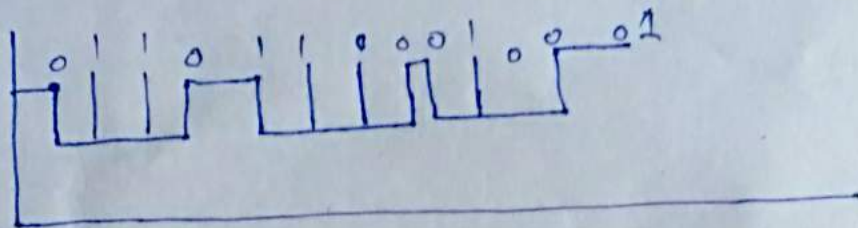
Q No 2:

Answer: My Roll No = 15121

Now to convert 15121 into Binary -

$$15121 = 011101100010001$$

NRZ-L Scheme Graph:



$$\text{IP Address} = 101.10.11 \times /104+5$$

$$\begin{aligned} 15121 &= 15 \\ 5+7 &= 12 \end{aligned}$$

$$\text{My IP Address} = 101.11.12/15$$

Convert to Binary =
1100101 10101011 11001

Address Mask = 12 .

$$\begin{array}{l} \text{First IP Address} \\ 0000000000000000 \\ 00000 \end{array}$$

Ip Address:

$$101.10.11.0$$

Last IP Address

||||| |||| |||| |||||

IP Address

101.10.11.31

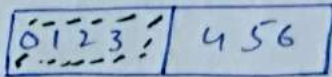
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Q No 3:

Answer:

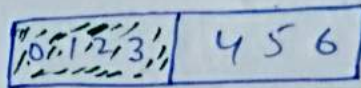
(a) Before A sends Any Frames.

Sender:



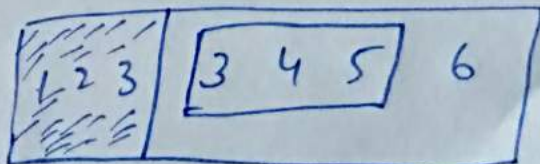
window of sliding protocols that may be transmitted = 4 bit.

Receiver:



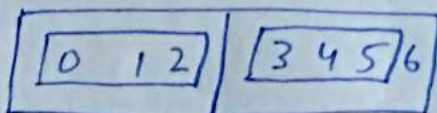
(b) After A sends frame 0, 1, 2, 3, 4 and Receives Acknowledgment B for 0, 1 and 2.

Sender: A has shrunk its window as it has Transmitted Five (5) But has Received Ack for 3, hence it's Keeping copy of one pdu.



Acknowledgment Received for 3 - bits.

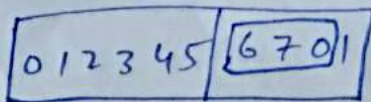
Receiver:-



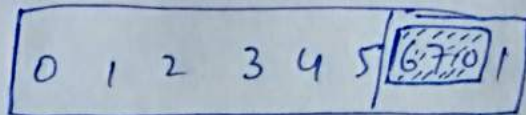
→ Receiver has Received All data
Hence the window teams in 4
Bit size -

(C) After A sends frames 5,6
and B Acknowledges 1,5
and the ACK is Received
By A.

Sender:-



Receiver:-



→ Acknowledgment Received for
3 Bit -

→ Now window size

$$ID = 15121$$

By Formula

$$\boxed{ID \text{ Last} / 2}$$

Since ID last = 1

$$\text{So } \frac{1}{2} = \boxed{0.5 \text{ window size}}$$

Q No 4:

Group "A".

Ans: For this group, each customer needs 64 addresses. This means that 6 ($\log_2 64$) bits are needed to each host. The prefix length is then $32 - 6 = 26$ the addresses

are

$$1^{\text{st}} = 160.23.17.6/26$$

$$2^{\text{nd}} = 160.23.17.1/26$$

$$3^{\text{rd}} = 160.28.17.6/26$$

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

Group "B":

For this group each customer needs 32 addresses. This means that 5 ($\log_2 32$) bits are needed to each host. The prefix length is then $32 - 5 = 27$ the addresses.

are

$$1^{\text{st}} = 160.23.17.6/27$$

$$2^{\text{nd}} = 160.23.17.1/27$$

$$3^{\text{rd}} = 160.28.17.6/27$$

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

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: -

$$1^{st} = 160.23.17.6/26$$

$$2^{nd} = 160.23.17.1/26$$

$$3^{rd} = 160.28.17.6/26$$

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