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Dept : Bs (S.E)

Section "B"

Assignment : CCNA

Date 24/06/2020

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## Question # 01.

## Answer # 01.

IP address one host:

101.10.11.X / ID 4+05

**IP adress :**

101.10.11.22/14

Convert this ip address into binary.

∵ id = 15277
= 1+5+2+7+7
X = 22

4th digit = 7
5th digit = 7
ID 7+7 = 14

11001101 1010 10110 1110
/ 1110

Address mask = 13
N = 32 − 14 = 18

Frist ip address :
10110
→by convert 18 to binary
ip address
101.10.11.0

| | |
|---|---|
| 2 | 22 |
| 2 | 11 — 0 |
| 2 | 5 — 1 |
| 2 | 2 — 1 |
| | 1 — 0 |

| | |
|---|---|
| 2 | 14 |
| 2 | 7 — 0 |
| 2 | 3 — 1 |
| | 1 — 1 |

Last IP address :-

Convert right most 4 bit into 1 in bainary code

11001011010 1011 10001 111

Convert this binary code into decimal

101.10.11.32/14

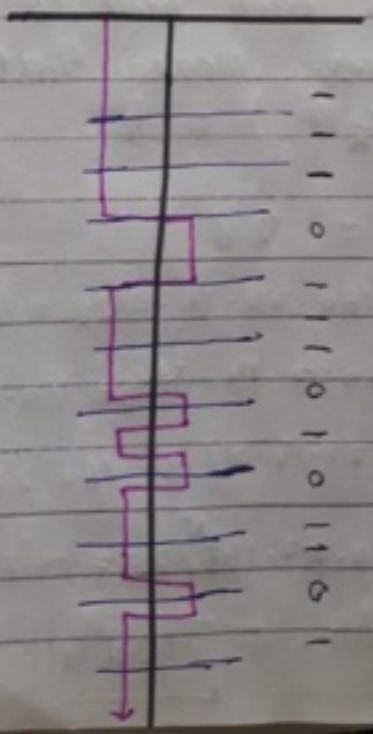
This is the last address.

Question # 02.

Roll NO : 15277

convert to binary

VRZ-L cheme graph



| | |
|---|---|
| 2 | 15277 |
| 2 | 7638 — 1 |
| 2 | 3819 — 0 |
| 2 | 1909 — 1 |
| 2 | 954 — 1 |
| 2 | 477 — 0 |
| 2 | 238 — 1 |
| | 119 — 0 |

NRZ-L-graph on previous page. drawn.

| | |
|---|---|
| 2 | 119 |
| 2 | 59 – 1 |
| 2 | 29 – 1 |
| 2 | 14 – 1 |
| 2 | 7 – 0 |
| 2 | 3 – 1 |
| | 1 – 1 |

// ——— // ——— //

Question # 03.

Two neighbouring nodes (A and B) use a sliding-window protocol a 3-bit sequence number. As the ARQ mechanism, go-back N is used with a window size of ID last. Assuming A is transmiting and B is receiveing. show the window position for the following succession of events

⊙ Before A sendes any frames

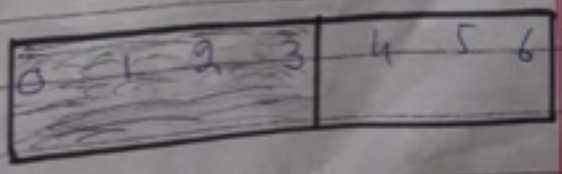
⊙ After A sendes frames 0, 1, 2, 3 4 and receive acknowledgment from B for 0, 1 and 2.

⊙ After A sendes frames 5, 6 and B acknowledges 5 and the Ack is received by A.

**ANSWER # 03.**

② before A sendes any frames.

**sender:**

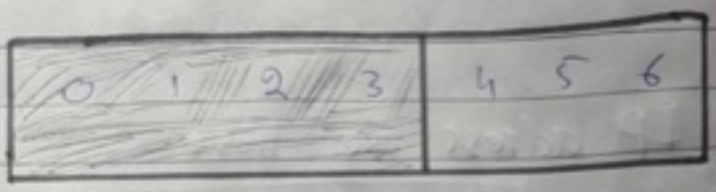



window of sliding protocal that may be transmitted = 4 bit wind

ID = 15277



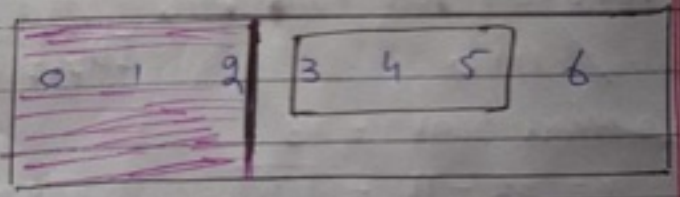
Receiver:




(b) After A sends frame 0, 1, 2, 3 4 and receives acknowledgment B for 0, 1 and 2

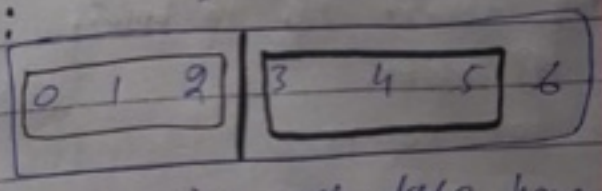
Sender :

A has shrunck its window as it has transmitted five (5) but has received ack for 3, hence it is keeping copy of one PDU.




Acknowledgment received for 3-bits

Receiver:



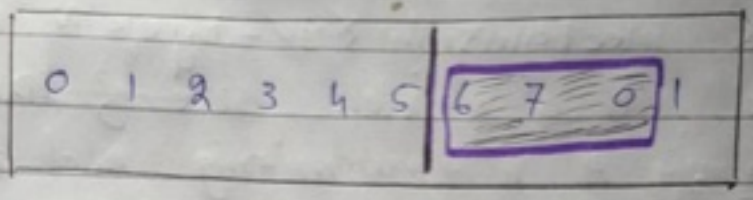

Receiver has received all data hence the window remains in 4 bit size.

ID = 15277

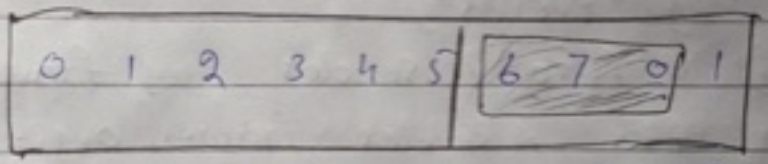
page (7)

c) After A sendes frames 5, 6 and B acknowledges 5 and the Ack is recewed by A.

**Sender :**




**Receiver :**




Acknowldgement recewed for 3-bit.

NOW window size

ID = 15277

by formula

$$\boxed{ID_{last} / 2}$$

Since $ID_{last} = 7$

so $7/2 = \boxed{3 \text{ window size}}$

ID = 15277

page (8)

Question No 04.

Answer # 04.

If address starting with

160.(X).(ID 3+4):0/16.

my id (X) = 15277

= 1+5+2+7+7

= 22

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

= 14

so

16.22.14.0/16

(a) Group first.

16 customer need each 64 addresses.

then mean 6-bit ($\log_2 64$) are needed to defined each.

since (32 - 6) = 26.

1st customer = 160.22.14.0/26 = 160.22.14.63/26

2nd customer = 160.22.14.1/26 = 160.22.14.63/26

⋮

16 customer = 160.22.14.15/26 = 160.22.14.255/26

Total = 16 × 64 = 1024

ID = 1577.



b) Group second:-

For this group each customer need 32 addresses.

means $5(\log_2 32) = 5$

$32 - 5 = 27$

1st customer = 160.22.14.0/27 = 160.22.14.255/27

2nd customer = 160.22.14.1/27 = 160.22.14.255/27

:

32 customer = 160.22.14.31/27 = 160.22.14.255/27

Total = 32 × 64 = **2048**

c) :. Group 3rd:-

64 customers each need 16 adresses. means that.

$4(\log_2 16) = 4$

Since

$32 - 4 = 28$

1st customer = 160.22.14.0/28 = 160.22.14.255/28

2nd customer = 160.22.14.1/28 = 160.22.14.254/28

3rd customer = 160.22.14.2/28 = 160.22.14.253/28

:

16th customer = 160.22.14.15/28 = 160.22.14.240/28

Total = 16 × 64 = **1024**