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Date ☐☐☐☐☐☐☐ (1)

Q1:

Ans

15125 = 14

2+5 = 7

Ip add = 101 . 10 . 11 . 114 / 7

Convert to binary

1110 . 1100101   1010 = 1011

Addess mask = 10

first IP add 32 - 7 = 25

00000 0000000 0000 0000

last IP address

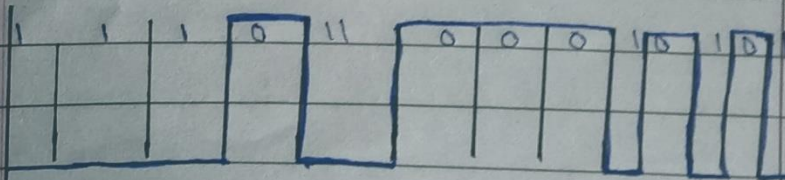1111111 1111 1111 1111

Ip address

101 . 10 . 11 . 31

Q 2:-

My iD No = 15 125

Now to Convert 15125

to binary :-

2	15125	1
2	7562	0
2	3781	1
2	1890	0
2	945	1
2	472	0
2	236	0
2	118	0
2	59	1
2	29	1
2	14	0
2	7	1
2	6	1
2	3	
	1	

15125 = 111 011 000 10101

Q 3:-

Ans (A) Before A send any frames :-

Sender :-

| 0 | 1 | 2 | 3 | 4 | 5 | 6 |

∴ Window of PDU that may be
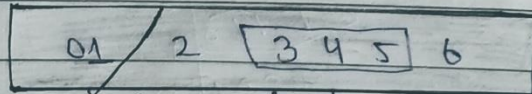transmited 4 bit window

Reciver :-

| 0 | 1 | 2 | 3 | 4 | 5 | 6 |

(B) Sender:-

A has shrunk its window as
it has transmited three pDus
but has recived ask for 2 pdus
hence it is :-

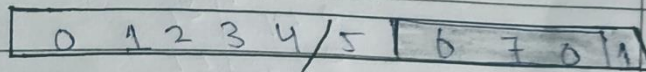| 01 | 2 | 3 | 4 | 5 | 6 |
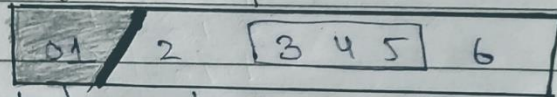
Acknowledgment recive for two
bits.

Reciver :-

| 01 | 2 | 3 | 4 | 5 | 6 |

reciver has recived all data hance
the window remains in 4 bit
size.

(C) Sender:-

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 |

Reciver:-

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 |
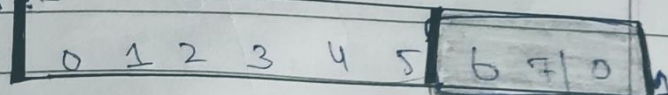
Acknoldgment recived for 3 bit

NOW window size

iD = 15125

by formula

$$\boxed{\text{iD last } / 2}$$

Since

ID last = 5

So 5/2 = 2 window size

Q4:- Group a :- 160.14.17.0/16

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

1st   = 160.14.17.6/26

2nd = 160.14.17.1/26

3rd = 160.14.17.6/26

total = 16 × 64 = 1024

Group - b

for this group .each customer needs 32 addresses .this means that 6 ($\log_2 32$) bits are needed to each host . the prefix length is then 32 - 6 = 26 . the addresses are

1st = 160.14.17.6/27

2nd = 160.14.17.1/27

3rd = 160.14.17.6/27

total = 16 × 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 than $32 - 6 = 26$ the addresses

1st = 160. 14. 17. 6 / 28

2nd = 160. 14. 17. 1 / 28

3rd = 160. 14. 17. 6 / 28

total = 16 x 64 = 1024