

SHAYAN 14487

Q4

(c) The third group has 64 customers each needs 16 addresses.

Ans: For this group, each customer needs 16 addresses

$$\log_2 16 = 4$$

$$32 - 4 = 28$$

| | | |
|----------|----------------|------------------|
| 1st cust | 160.24.93.0/28 | 160.24.93.255/28 |
| 2nd cust | 160.24.94.0/28 | 160.24.94.255/28 |
| 3rd cust | 160.24.95.0/28 | 160.24.95.255/28 |
| 4th cust | 160.24.96.0/28 | 160.24.96.255/28 |
| 5th cust | 160.24.97.0/28 | 160.24.97.255/28 |
| 6th cust | 160.24.98.0/28 | 160.24.98.255/28 |
| 7th cust | 160.24.99.0/28 | 160.24.99.255/28 |

64th cust 160.24.156.0/28 160.24.156.255/28

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

NAME = SHAYAN, ID = 14487

Paper = CCN

Section = A

Degree = BS (SE)

Q1

Ans:

First address:-

The first address in the block can be found by setting the rightmost $32-n$ bits to 0s

$$\rightarrow 101.10.11.24/15$$

$$32-n$$

$$\text{Where } n = 15$$

$$32-15 = 17$$

$$101.10.11.24 = 01100101 \ 00001010 \ 00001011 \ 00011000$$

Now setting the rightmost 17 bits to 0s.

$$= 01100101 \ 00001010 \ 00000000 \ 00000000$$

Now convert this binary number to decimal.

$$= 101.10.0.0$$

The First address is 101.10.0.0

P.T.O

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Receiver

~~0, 1, 2, 3, 4~~ 0, 1, 2, 3, 4

Receiver has receive all data
hence the window remaining
in 3 bits size

(C)

Ans:

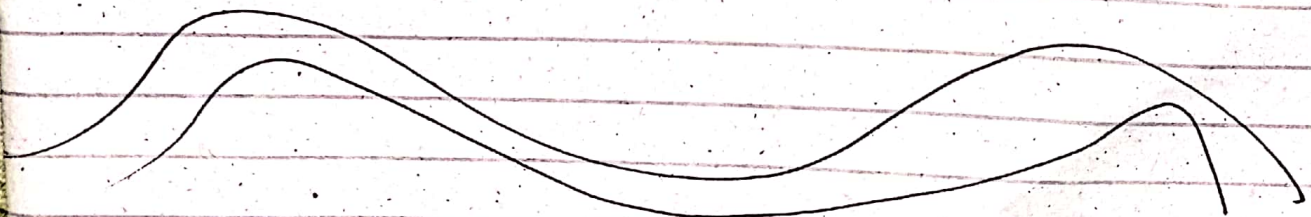
After A sends frames 5, 6
and B acknowledges 5 and
The ACK is received by A

Sender

0, 1, 2, 3, ~~4~~, 5, 6, 0, 1

Receiver

0, 1, 2, 3, 4, 5, 6, 0, 1



SHAYAN , 14427

Q3:-

Ans(A)

Sender 0 1 2 3 4 5 6

window of PDU that may be transmitted = 4 bit window

Receiver

0 1 2 3 4 5 6

(b)

Ans:-

After 'A' send frame 0,1,2,3,4 and receive acknowledgment from B for 0,1 and 2.

Sender

A has shrunk its window as it has transmitted three PDUs but has received ack for 2 PDU hence it is keeping copy of one PDU.
0, 1, 2, 3, 4

Acknowledgment received for two bits.

ID = 14487 , SHAYAN

(2)

Last address :-

The last address in the block can be found by setting the right most $32-n$ bits to 1s. $32-15=17$

$101.10.11.24/15 = 01100101\ 00001010\ 00001011\ 00011000$

Now setting the rightmost 17 bits to 1s.

$01100101\ 00001011\ 11111111\ 11111111$

$01100101 = 101$

$00001011 = 11$

$11111111 = 255$

$11111111 = 255$

$= 101.11.255.255$

So the last address is 101.11.255.255