

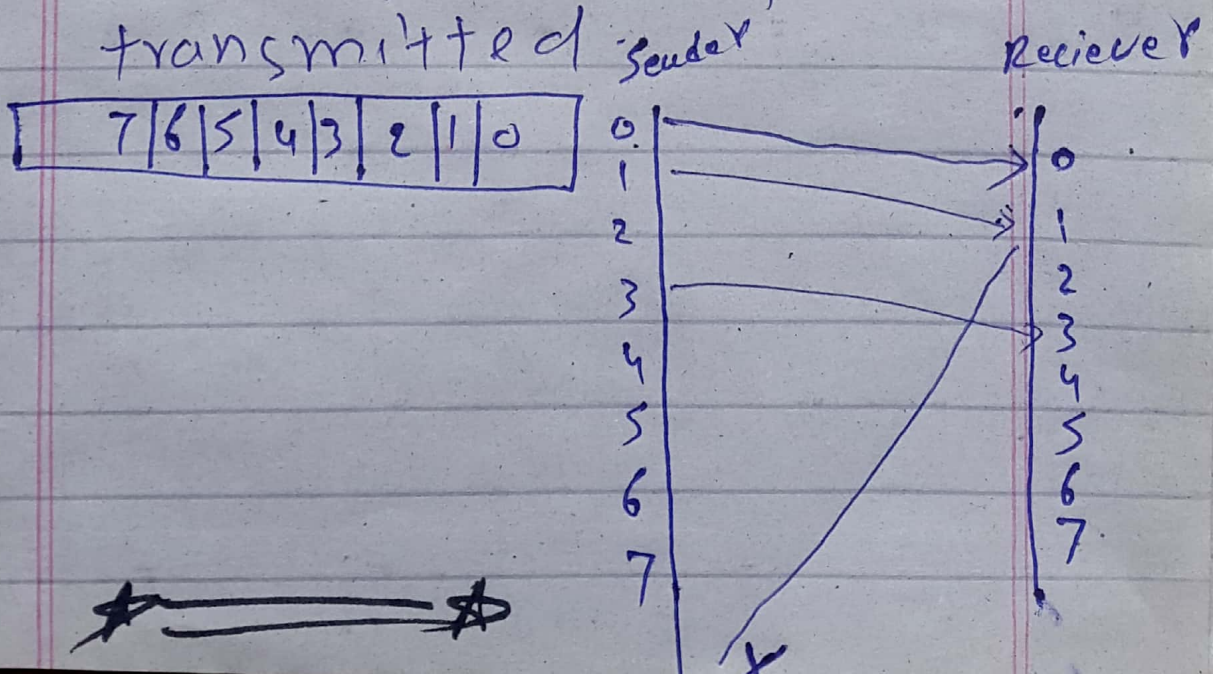
(2)

Name: Shayan Khan

ID : 6833

Ans2:

If frame number 1 is lost so obviously the receiver will not send the acknowledgment for ~~frame~~ frame no 1. It will go back ARQ already reserved frame number 2, 3, 4, 5 and ^{the window will move} the sender will retransmitting all current. The receiver will send negative acknowledgment for frame NO 1. And it can be transmitted alone after all frames are transmitted



3

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Ans 3: Explanation: According to Question

It is required to sample the signal at twice the highest frequency

So, bit rate = ~~current width~~

↓
= current bandwidth * 2 * sample size

$$\text{bit rate} = 4 \text{ kHz} * 2 * 16 \text{ bits}$$

$$\text{bit rate} = 4 \text{ k/sec} * 2 * 16 \text{ bit}$$

$$\text{bit rate} = 128 \text{ kb/sec}$$

$$\text{bit rate} = 128 \text{ Kbps}$$

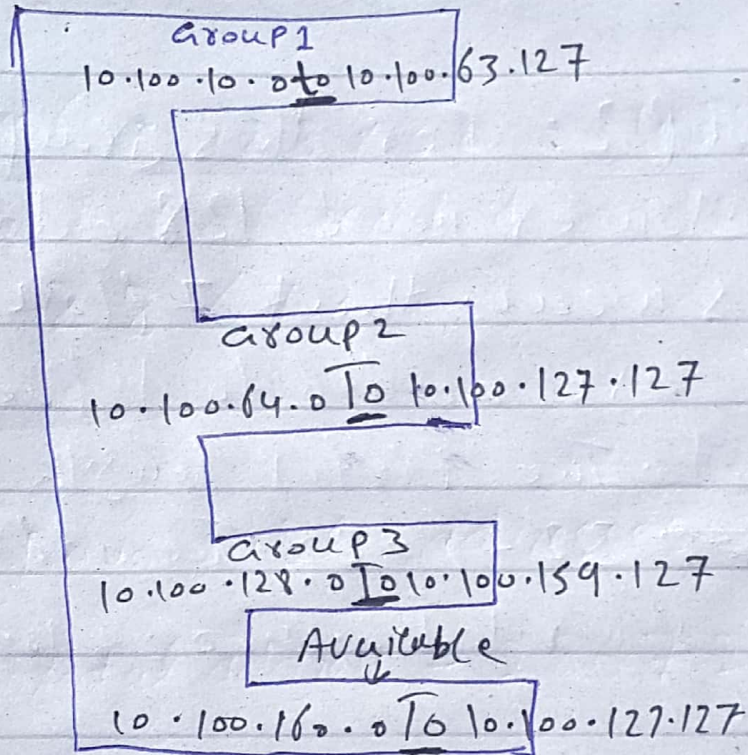


(4)

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ANS 4:



First Group:

For the each customer need 128 address. This mean that 8 ($\log_2 128$) bit are needed to define each host.

$$32 - 8 = 24$$

1st customer 10.100.10.0/24 10.100.10.128/24

2nd customer 10.100.11.0/24 10.100.11.128/24

64th customer 10.100.63.0/24

(5)

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$$\text{Total} = 64 \times 128 = 8,192$$

Group 2: For this group each customer need 128 addresses.

This means that 7 ($\log_2 128$) bit are needed to define each host. The prefix length is then

~~32~~ $32 - 7 = 25$ The addresses are:

1st customer: 10.100.64.0/25 10.100.64.127/25

2nd customer // //

128th customer // //

$$\text{Total} = 128 \times 128 = \del{16384} 16384$$

Group 3: For this group each customer need 64 bit. This means that 6 ($\log_2 64$) bit are needed

to each host. The prefix length is then $32 - 6 = 26$. The addresses

are:

6

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1st customer 10.100.127.0/28

4 10.100.127.64/28

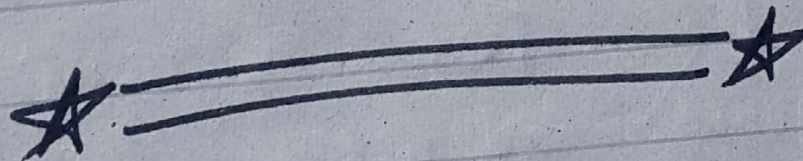
$$\text{Total} = 128 \times 32 = 4096$$

Number allocated addresses is
= 28672

No of available addresses

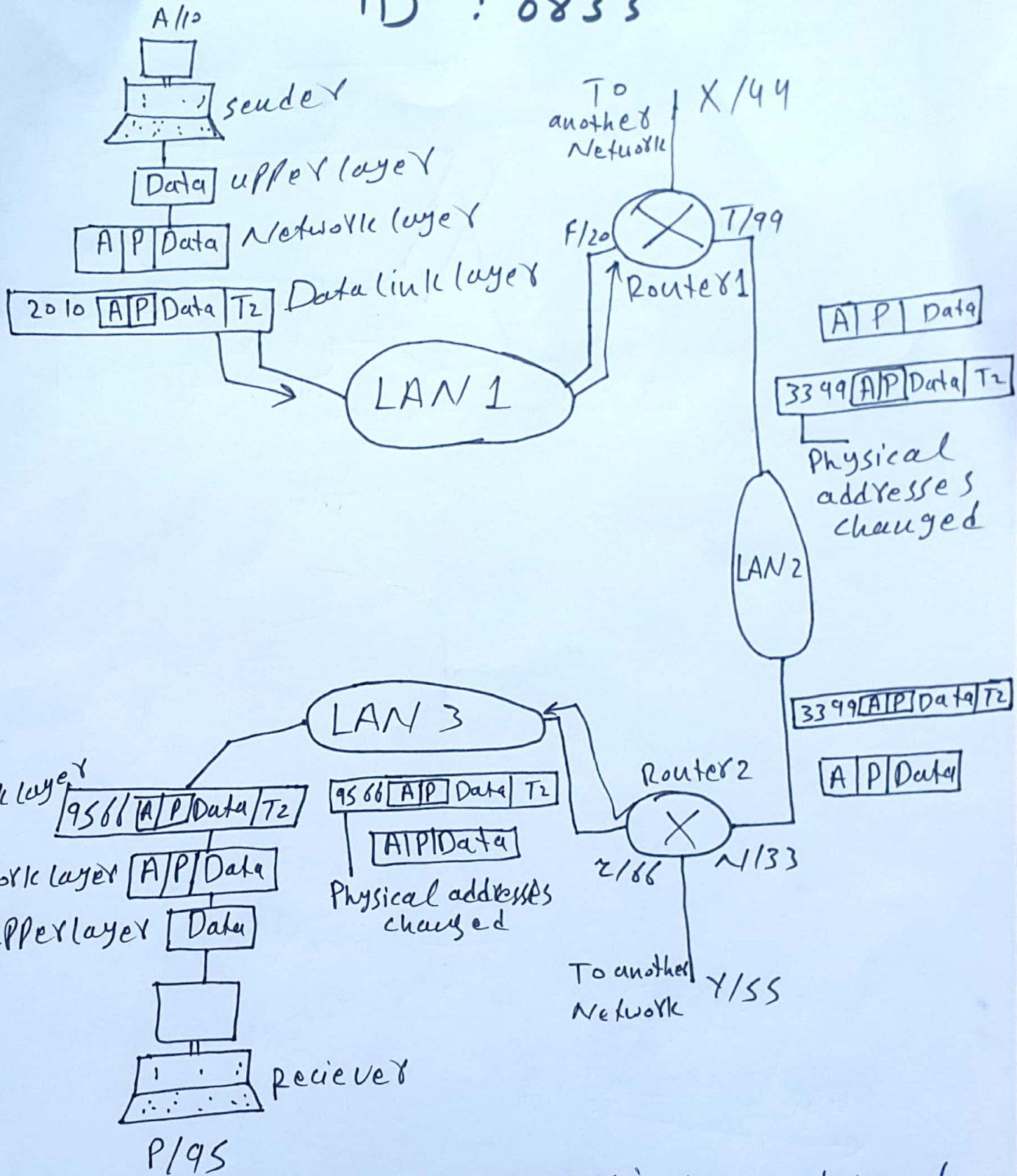
$$= \text{total address} - 28672$$

~~region~~

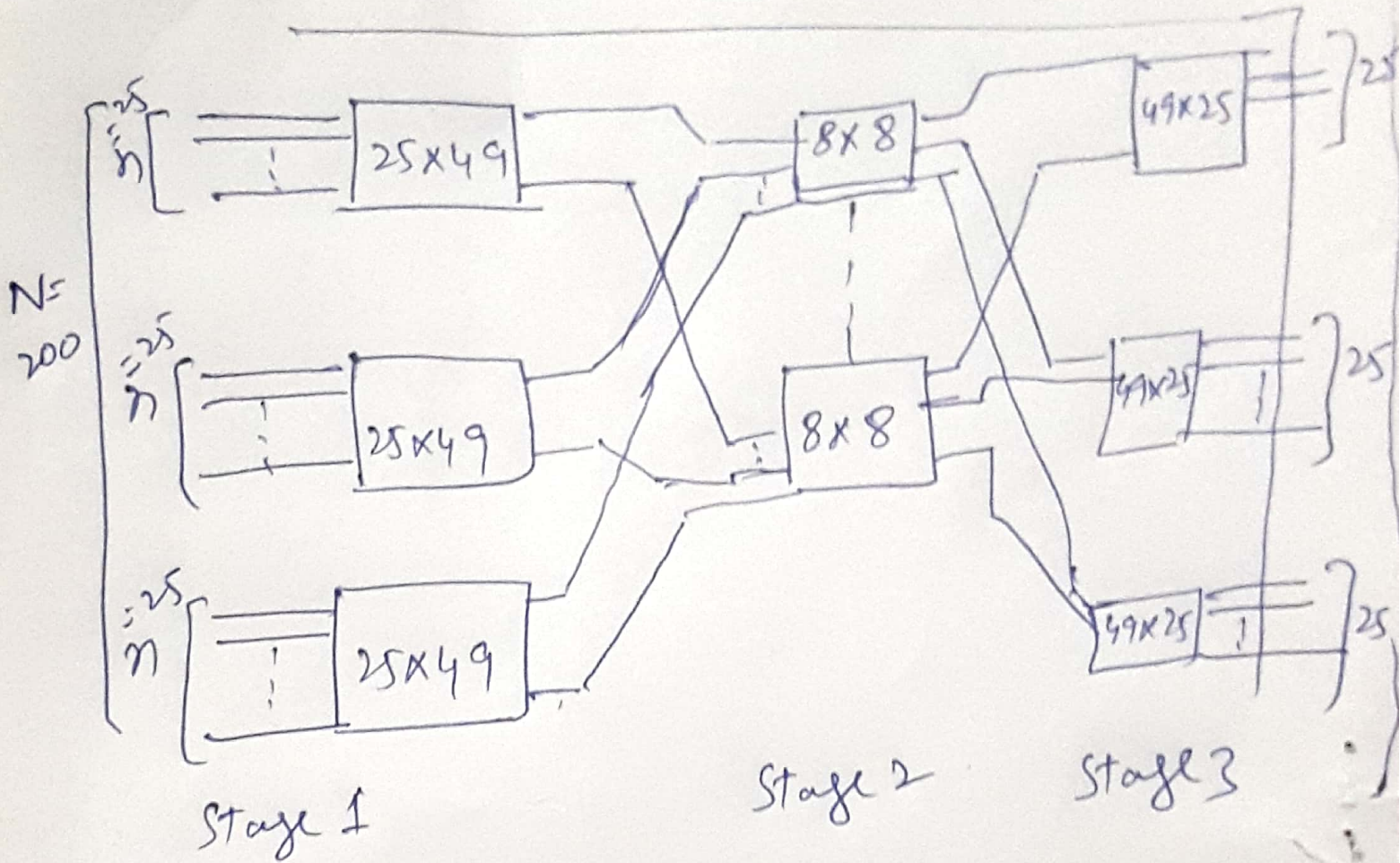


Ans 5:

(7)
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- * Switching at the network layer in the internet uses the datagram approach to packet switching.
- * Communication at the network layer in the internet is connectionless.



Sol

$$N = 200$$

$$n = 25$$

$$\frac{N}{n} = \frac{200}{25} = 8$$

$$K = 2(n) - 1 = 2(25) - 1 = 50 - 1 = 49$$