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Class

BS SE-B

Subject

CNN

Final

Term

Paper

28-9-2020

Q1. we need three stages space division switch with $N=200$

we use 25 crossbars at first and third stages.

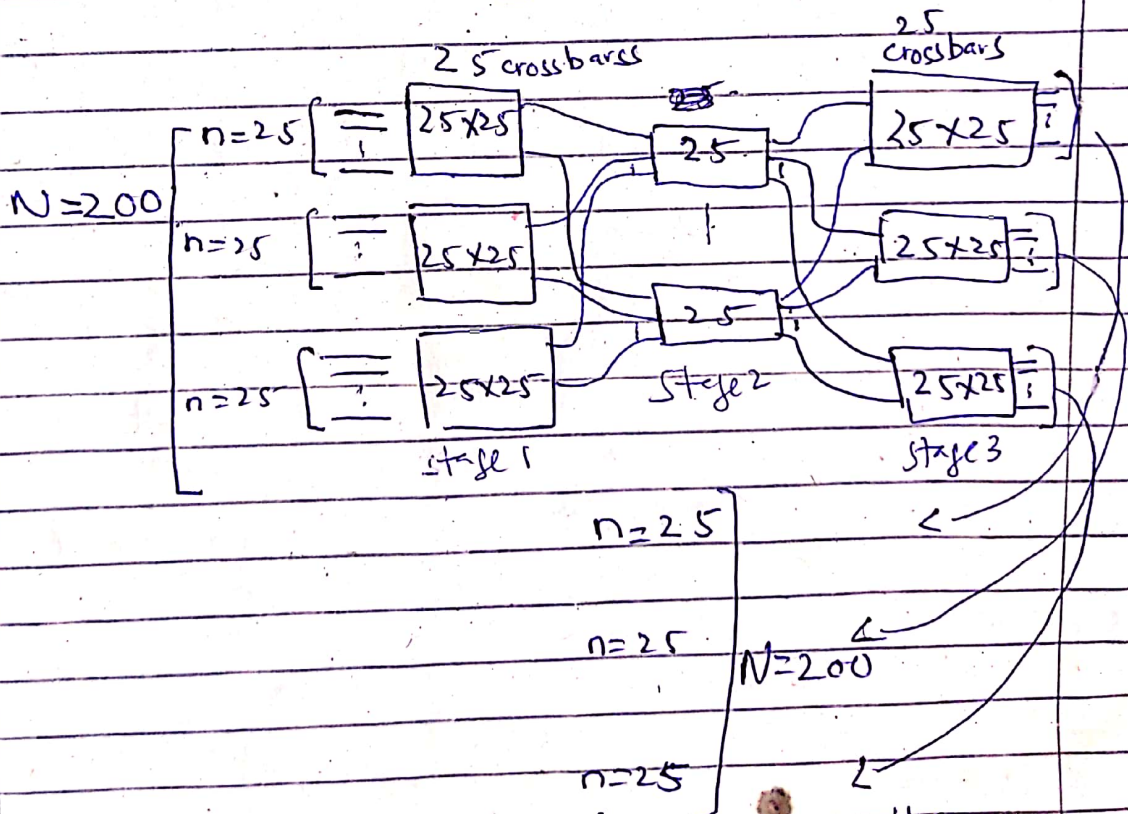
- what is number of crossbars at middle stages so that every mid stage crossbar has equal inputs and outputs -

- Draw configuration diagram and calculate the total number of cross points

- Calculate the total number of crosspoint using clos criteria -

Sol 91- The middle stage crossbar is 25
b1-

Draw configuration diagram



Total number of corresponding
 $= 25(25 \times 25) + 25(25) + 25(25 \times 25)$
 $= 25(625) + 25 \times 25(625) = 31275$

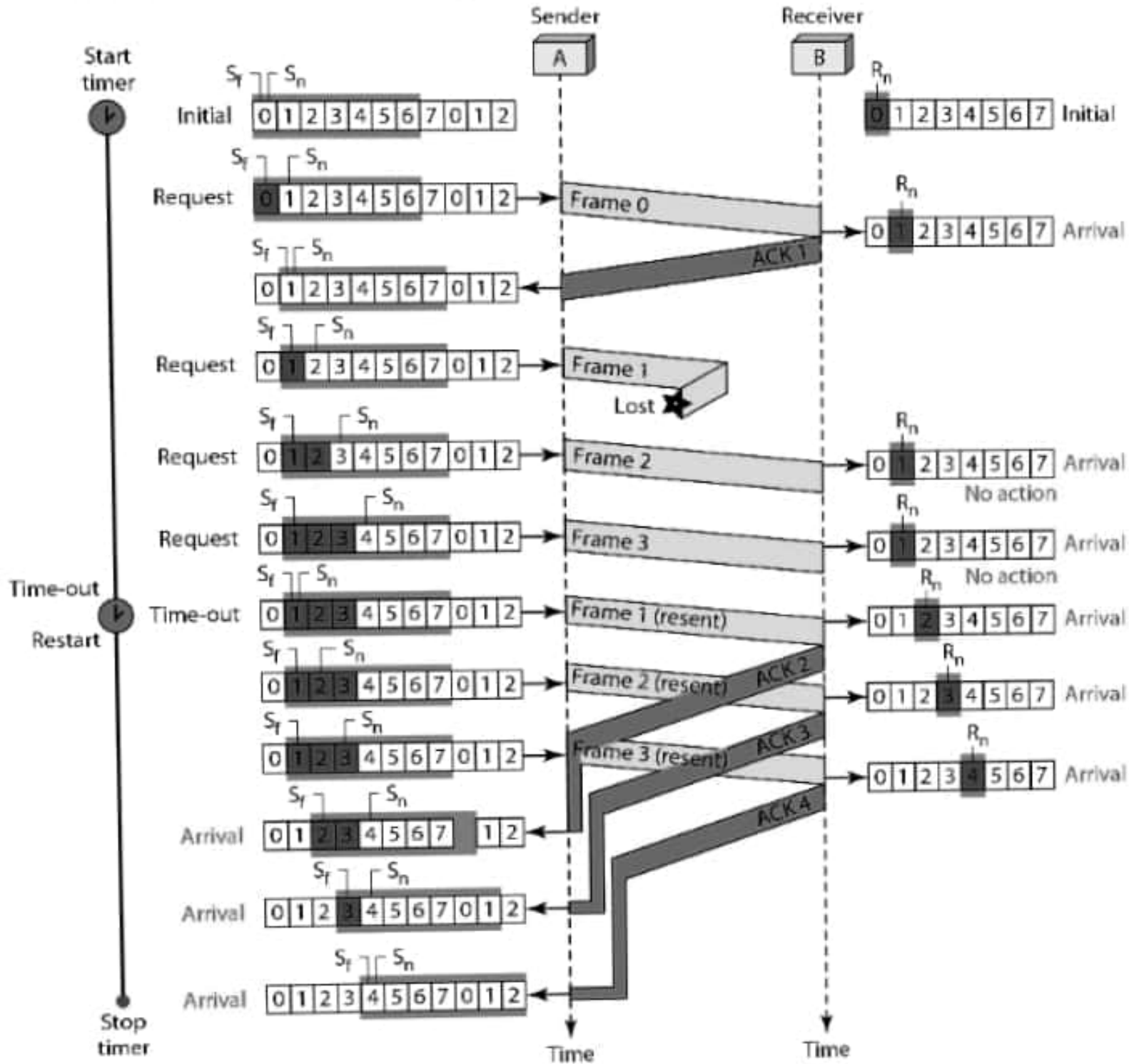
C

if we use one crossbars (200x200). all input lines at same time which mean 200 simultaneous connection.

only for simultaneous connection possible for each crossbar at the first stage
The mean to total number
 $25 * 25 = \cancel{250} 625$

Q2. Explain and show graphical what will happen when Frame 1 is lost - using selective Repeat ARQ -

Ans. In selective repetitive ARQ only the erroneous or lost frames are received and buffered. The receiver while keeping track of sequence number, buffers the frames in memory and sends NACK for only frame which is missing or damage. The sender will send retransmit packet for NACK is received. At the receiver site we need to distinguish between the acceptance of a frame and its delivery to the network layer. At the second arrives and is stored and marked, but it cannot be delivered because frame 1 is missing -



Q3:- A digitized voice channel is made by digitizing 4K-Hz - - - - 16 bits - what is the required bit rate?

band width = 4KHz
 freq = 16
 bit rate ?

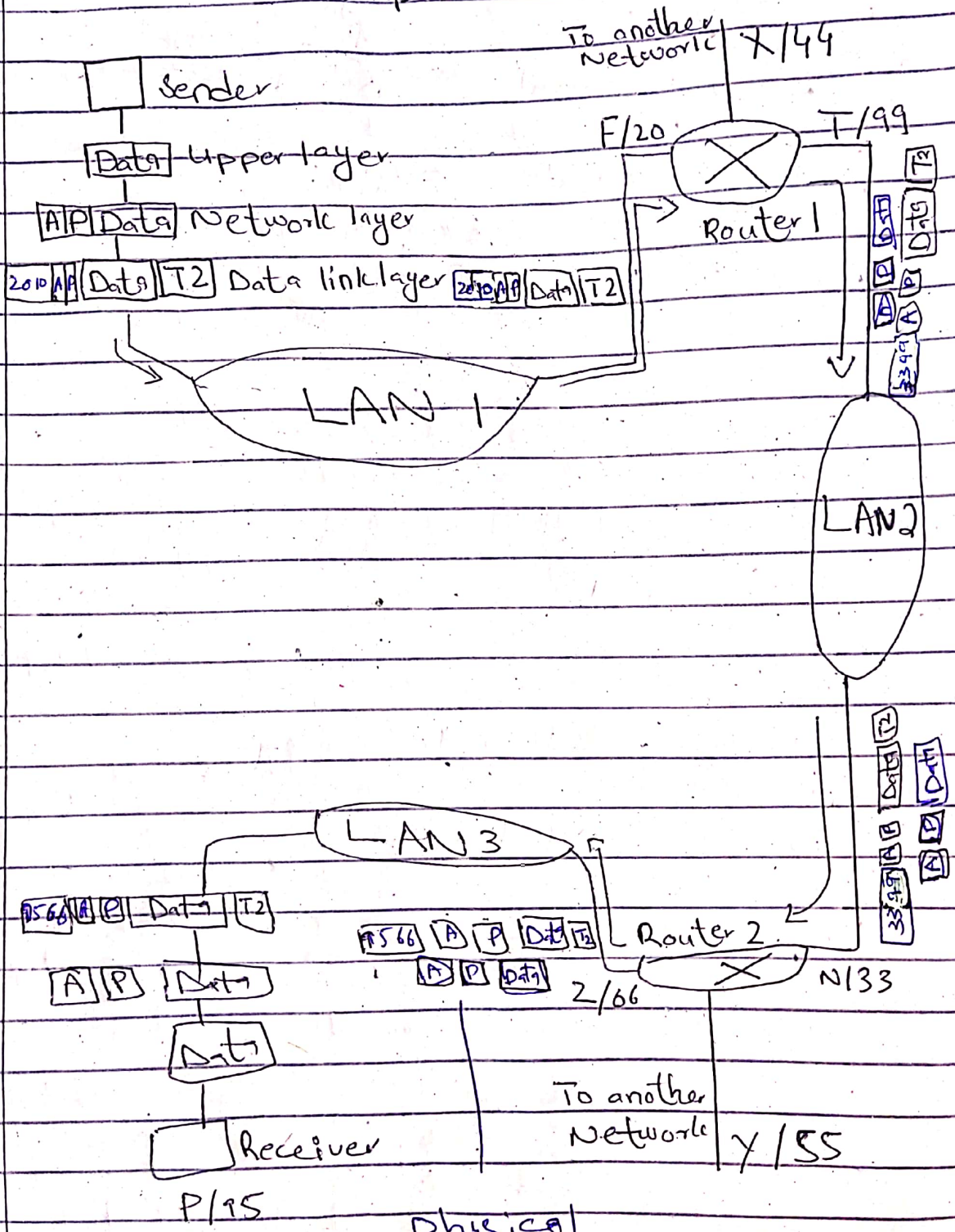
sol

The bit rate can be

$$2 \times 4000 \times 16 = 128000 \text{ bps}$$

$$= 128 \text{ Kbps}$$

Q5. - Below show a part of internet with two routers
 --- - Explain each step -



Physical Address Changing

Explanation

It may be obvious that each router must have a separate physical address for each connection. It may be. The computer with logical address with physical Address 10 needs to send packet to the computer with the logical Address P and physical Address 95. The sender encapsulates its data in a packet at network layer and add two logical Address (A and P). The logical Address come before logical destination address (contrary to the order of physical Address). The network layer however, needs to find physical address of next hop before the packet can be delivered. The most layer consult its routing table and find logical Address of next hop router 1 to be F -

Another protocol Address Resolution Protocol ARP finds the physical address of router 1 to corresponds to its logical Address (20) -

Q4 - An ISP is granted a block of 4 address starting with 10.100.10.0/16.

Ans Sol. - a:-

10.100.10.0/16

64 customer each needs 128 address

1st customer 10.100.10.0 to 10.100.10.127

2nd customer 10.100.10.128 to 10.100.10.255

64th customer 10.100.41.128 to 10.100.41.255

Total 8192

b:-

128 customers each needs 128 address

1st customer 10.100.42.0 to 10.100.42.127

2nd customer 10.100.42.128 to 10.100.42.255

128th customer 10.100.105.128 to 10.100.105.255

Total 16384

c:-

128 customers each needs 32 address

1st customer 10.100.106.0 to 10.100.106.31

2nd customer 10.100.106.32 to 10.100.106.63

128th customer 10.100.131.224 to

10.100.121.255

Total 4096

d:-

Number of granted ISP = 65536

Number of allocated ISP = 28672

Number of available ISP = 36864