

Assignment # 3:-

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23SE-623

Quest# 1:-

[a]:-

- Software Defined Networks is architecture built to enable networks to be controlled centrally while eliminating the forwarding/per-router phase. This provides a guaranteed low bandwidth & in-order delivery of packets from different routers.

SDN is different as it eliminates the forwarding phase from data plane to control plane & minimizes bandwidth. All communication can be done through one controller & easily transferred packets.

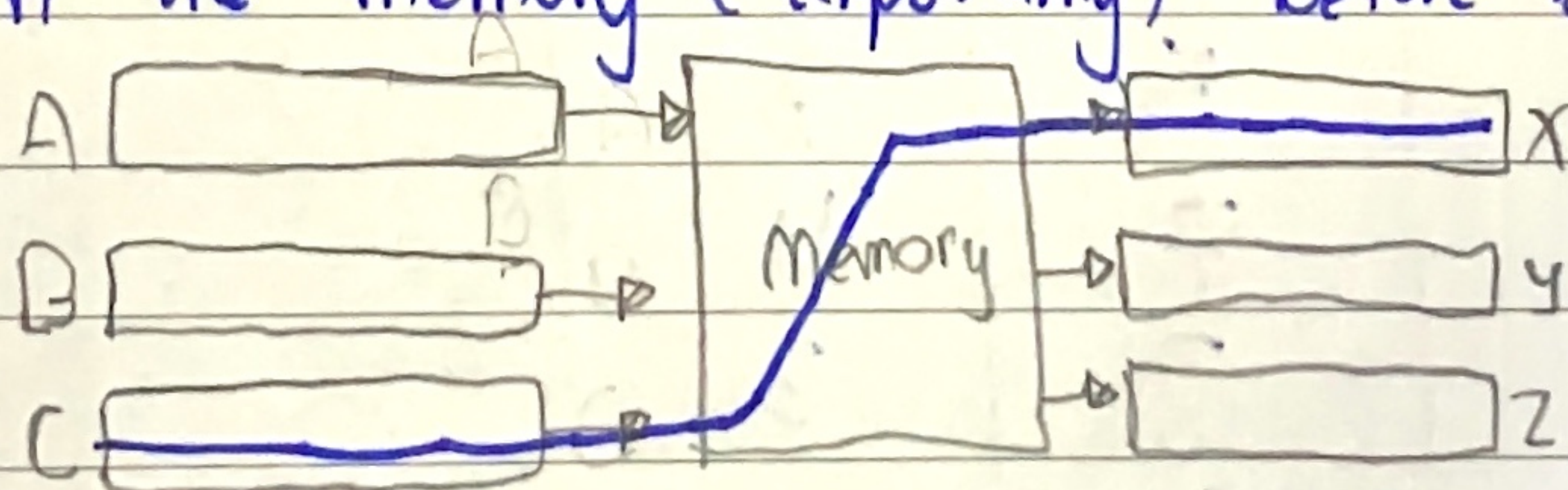
[b]:-

- There are 3 types of switching fabrics:-

1) Shared Memory:-

This type has all nodes are connected to the memory, & packets are stored in the memory (temporarily) before being transmitted.

Illustration:-



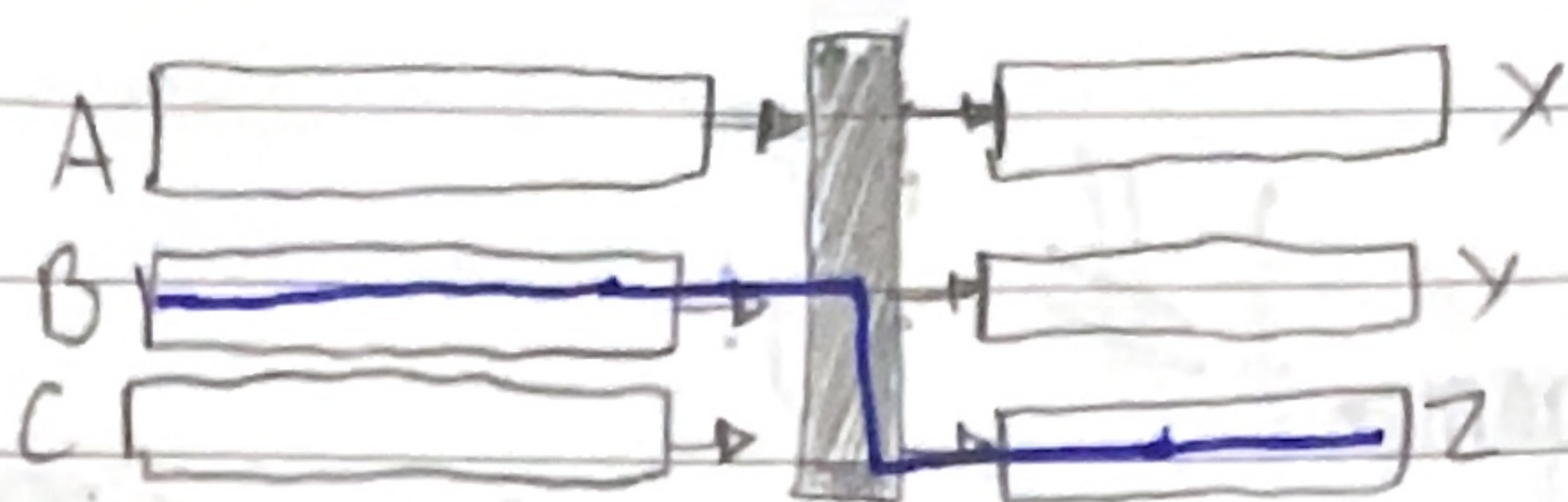
2) Bus Switching fabric:-

All nodes are connected to a transmission line called "bus".

The bus is usually responsible for the transmission.

Date:

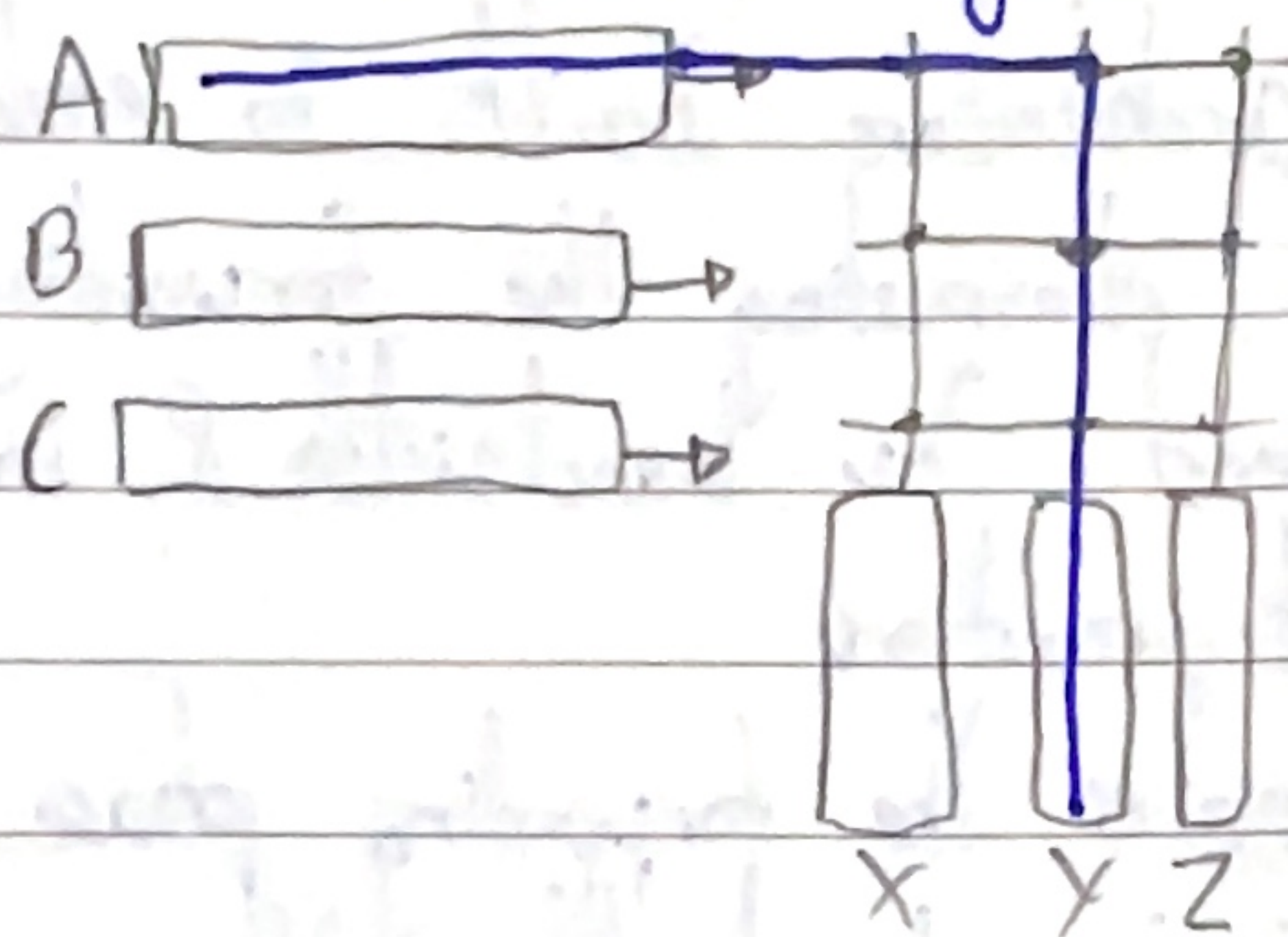
• Illustration:-



Crossbar Switching Fabric:-

Nodes are connected to a matrix of switches that allow multiple connections. It has high bandwidth & is scalable but expensive.

• Illustration:-



Arrival [c]:-

Packets	Using FIFO	Leave time	Delay
1	0	1	1
2	0	2	2
3	1	3	2
4	1	4	3
5	3	6	3
6	2	5	3
7	3	7	4
8	5	8	3
9	5	9	4
10	7	10	3
11	8	11	3
12	8	12	4

$$\text{Average Delay} = \frac{\sum \text{Delay}}{\text{Total packets}} = \frac{35}{12} = 2.91 \text{ secs}$$

Ques #2

[a]:

- Classful addressing involves dividing addresses into five different based on the first octet of their IP. The classes are

Class-A :- 1 to 127

Class-B :- 128 to 191

Class-C :- 192 to 223

Class-D :- 224 to 239

Class-E :- 240 - onwards.

[b]:

- It is used to divide IP networks into subnets with different subnet masks.

Sub-network :- /27

Usable Address :- 29

Host :- 32 (30 usable)

[c]:

- The amount of datagrams would be 32 as the file size is 48,840 & MTU is 1500.

Considering it includes the header, it should transmit around 480 bytes per datagram.

[d]: Ques #3 [a]:

It won't be forward as it does not match any of them. but if we consider short range then any interface.

[b]:

Interface 3.