



Examination Answer Book

12 Pages

Instructions to candidates

1. Please give the information requested in the boxes below.
2. Enter you name in the space provided to the right and seal to hide your name.
3. The answers must be **legibly** written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
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1	Student Number	1404049
2	Title of Examination Paper	LOCAL AREA NETWORKS
3	Module Code	ACCC5002
4	Date and Time of Examination	9 th May 2016 2 hours
5	Examination Venue	LH2
6	Seat Number	08
7	Number of Answer Books handed in	0

List the numbers of the questions you have attempted	Office Use
1	16
2	-0-
3	8
Total	24/45

321.

FOR ADMINISTRATIVE USE ONLY, CAREFULLY REMOVE PERFORATED STRIP

PULL & TEAR

outer

Core

3

distribution

Access

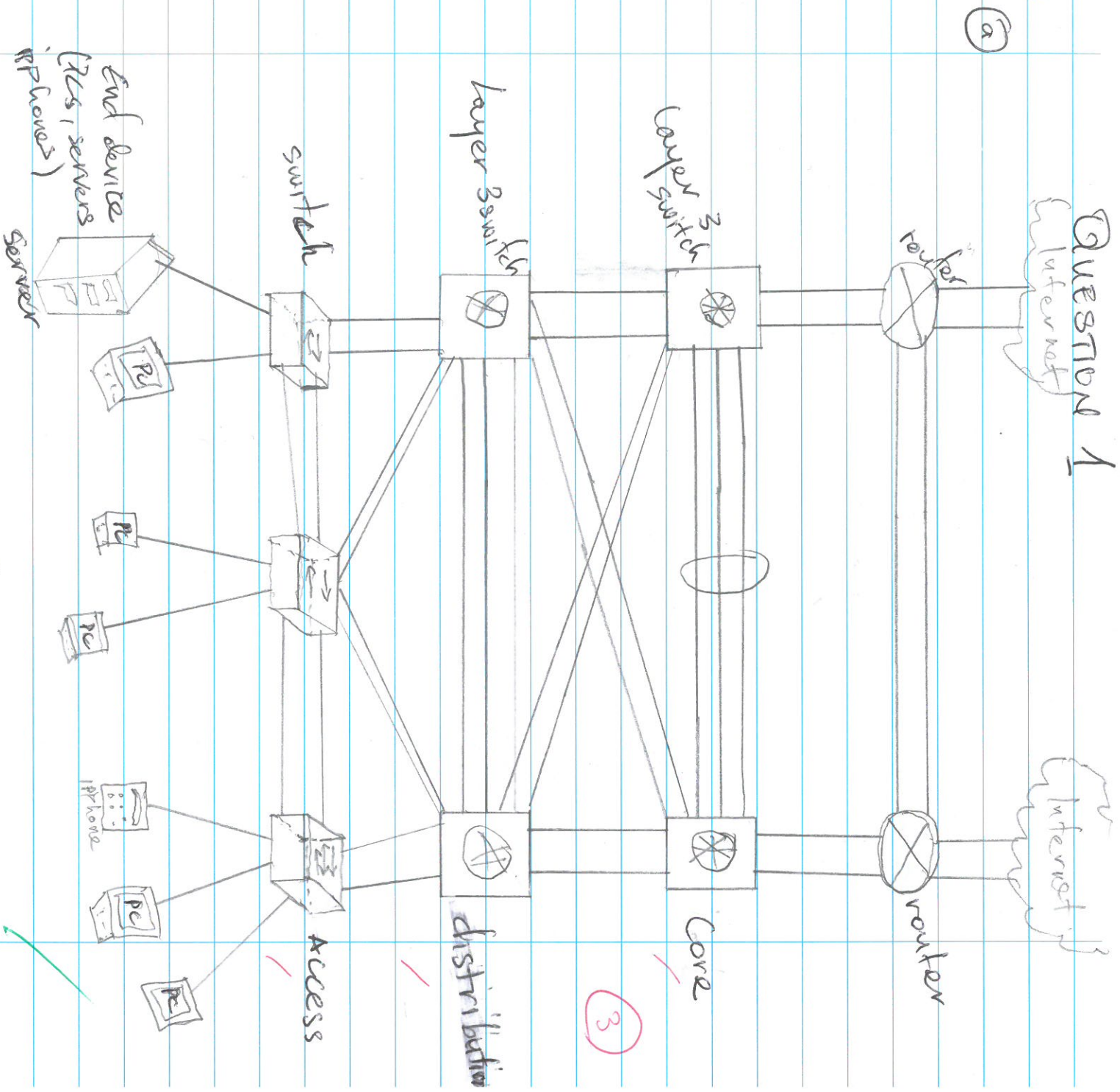


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Question 1



3-tier hierarchical Network design is made of 3 layers namely Core, distribution and access.

- Core is the backbone of the network as it connects the network to both the router and layer 3 switch at the distribution.

- Distribution:

- High-speed
- connection to Internet

(2)

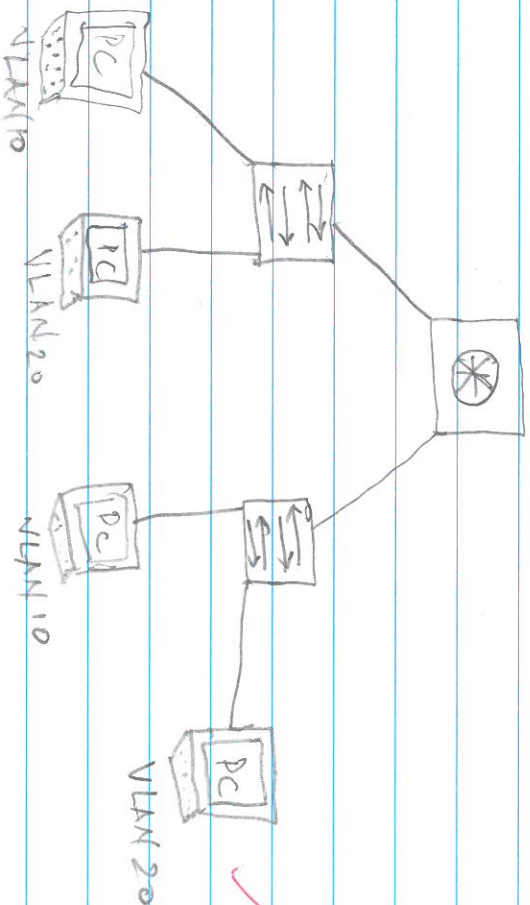
Thus is the middle layer in a network aimed at interconnecting the access and core layers. At this layer, alternate routes are provided for multiple

easy circulation of traffic. At this layer, failure of any router don't highly affect the network as traffic will be redirected to the available path. (2)

~~Access~~ Access: At the access layer, and devices are connected to the network through the switch. Traffic is monitored through each port on the bases of interface used. The switch contains a Media access control (MAC) address table to be able to recognise the movement of traffic. (3)

- Example.

(b) VLANs:



VLAN (VIRTUAL LOCAL AREA NETWORKS);

~~These are~~ This is a virtual subdivision of network for easy circulation of traffic.

VLAN:

This is the virtual subdivision of a local area network for easy circulation of traffic. The default VLAN in a switch is 1. This means that initially all ports on a switch are assign on VLAN 1. Communication

Occur only with Vlan's of similar value. for example the diagram illustrates two Vlan's on the same network but different location within the network. Vlan 10 will only communicate with Vlan 10 on the ~~other~~ ends ^{subnetwork} ~~network~~ the network.

Vlan's are also further subdivided into sets

Each Vlan is assigned a port and unassigned Vlan's are automatically allow on the default.

Benefits of Vlan's.

(2)

- Security ✓
- Reliability ✓
- Maintainability ✓
- Availability of routes
- Consistency
- Cost Reduction
- Broadcast Storm Mitigation
- Simpler Proj. mgmt.
- Higher Performance

Question 2

b) ~~VTP Domain:~~

~~This is the domain in which trunking is executed.~~

~~2-VTP Server:~~

~~This is the server that assigns trunking protocol to the client. That is prepare routes for the flow of traffic. Participate partially in the trunking process.~~

~~3-VTP Client:~~

~~Permits the client server to assign routes. General they are interfaces. Fully participate~~

~~4-VTP Transparent:~~

~~This VTP is present in the trunking process but doesn't participate in the trunking process.~~

⑥ 1-VTP Domain:

This is the domain in which the trunking process is executed.

2-VTP Server:

This server participate in the trunking process by assigning trunking protocols to VTP clients that request for flow of traffic.

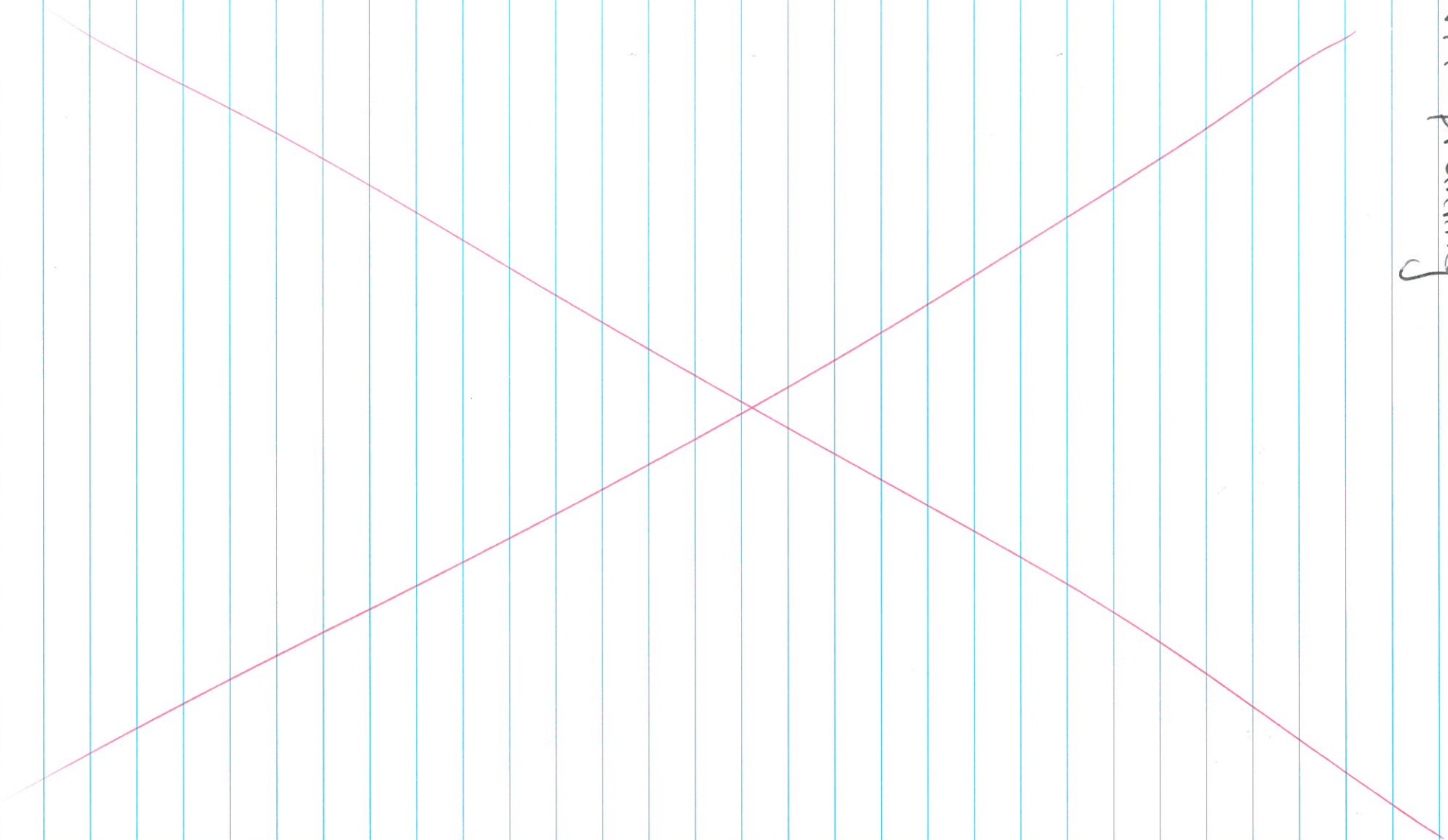
3-VTP client:

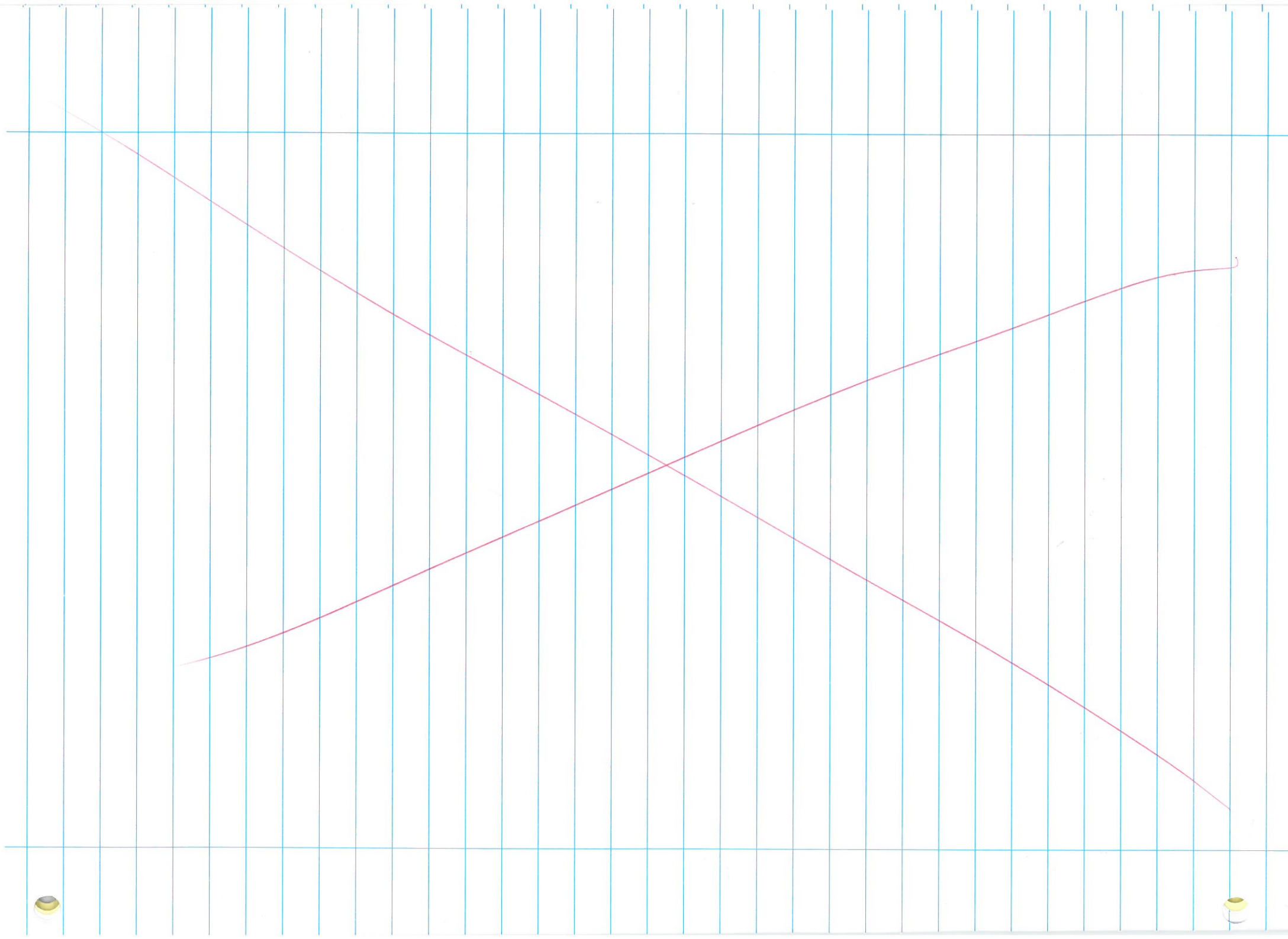
Fully participate in the trunking process by receiving protocols from assigned VTP servers.

4-VTP Transparent:

Present in the trunking process but don't participate. Aim at monitoring traffic flow.

5-VTP pruning





Question 4

(a) Network Address Translation Benefit.

- Translate public Internet protocol (IP) address to private when using in a network and private address to public when access the internet.
- Security is maintained as users on the other end of network cannot access the IP address of a host situated in another network.

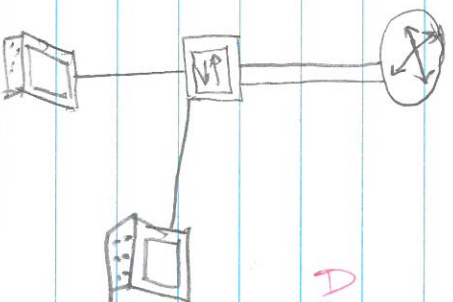
(b) Serial port:

(c)

Host 1 is located on the other end of the network different from ~~network~~ of the DHCP server. Moving from one network to the other with through the default gateway on IP address helper is required to enable the server to ~~lead~~ and assign an IP address to host-1

3)

-Router on a stick.



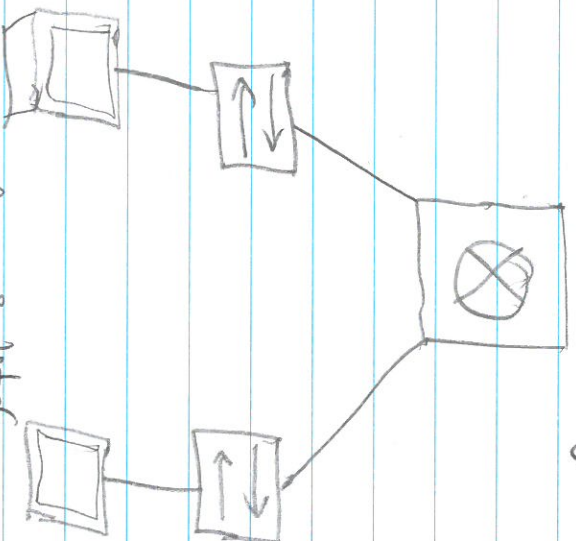
Annotation?

(2)

In this routing, each device to be routed is assigned a port on the router. This means that multiple ports for multiple devices to be router.

(1)

-Multilayer switch routing



(2)

In multilayer switch routing a multilayer switch acts as a router to route packets within the network.

(2)

~~Virtual routing~~

✓

⑥ Consistency: That is the switches must match. 
- They should be on the same network. VLAN 

⑦ Auto: In this mode, the port requires authentication for operations.

⑧ On: The port is available for transfer of traffic. 
Desirable!

The port is made available and request for connection with another port.

