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1) A computer Network is a group of computers that use a set of common communication protocols over digital interconnections for the purpose of sharing resources located on or provided by the network nodes. The interconnections between nodes are formed from a broad spectrum of telecommunication network technologies, based on physically wired, optical, and wireless radio-frequency methods that may be arranged in a variety of network topologies.

2) B class
Subnet mask = 255.0.0.0
Network ID = 130.1.1.1
IP Range = 128.0.0.0 – 191.255.255.255

Binary 130
1 1 1
1000010 00000001 00000001 Decimal
= 10000010.00000001.00000001.00000001

Decimal = 10000010 = 130
00000001 = 1
00000001 = 1
00000001 = 1

IP adress = 130.1.1.1

Examples
Base 2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0
Binary 1 1 1 1 1 1 1 1
Decimal 128 64 32 16 8 4 2 1

Decimal	130.	1.	255.	19
Binary	10000010.	00000001.	11111111.	00010011

Address	10000010.	00000001.	11111111.	Binary
192.	168.	1.	255	Decimal

3) OIS Model TCP/IP Conceptual Layers

7 Application
6 Presentation
5 Session
4 Transport
3 Network
2 Data Link
1 Physical

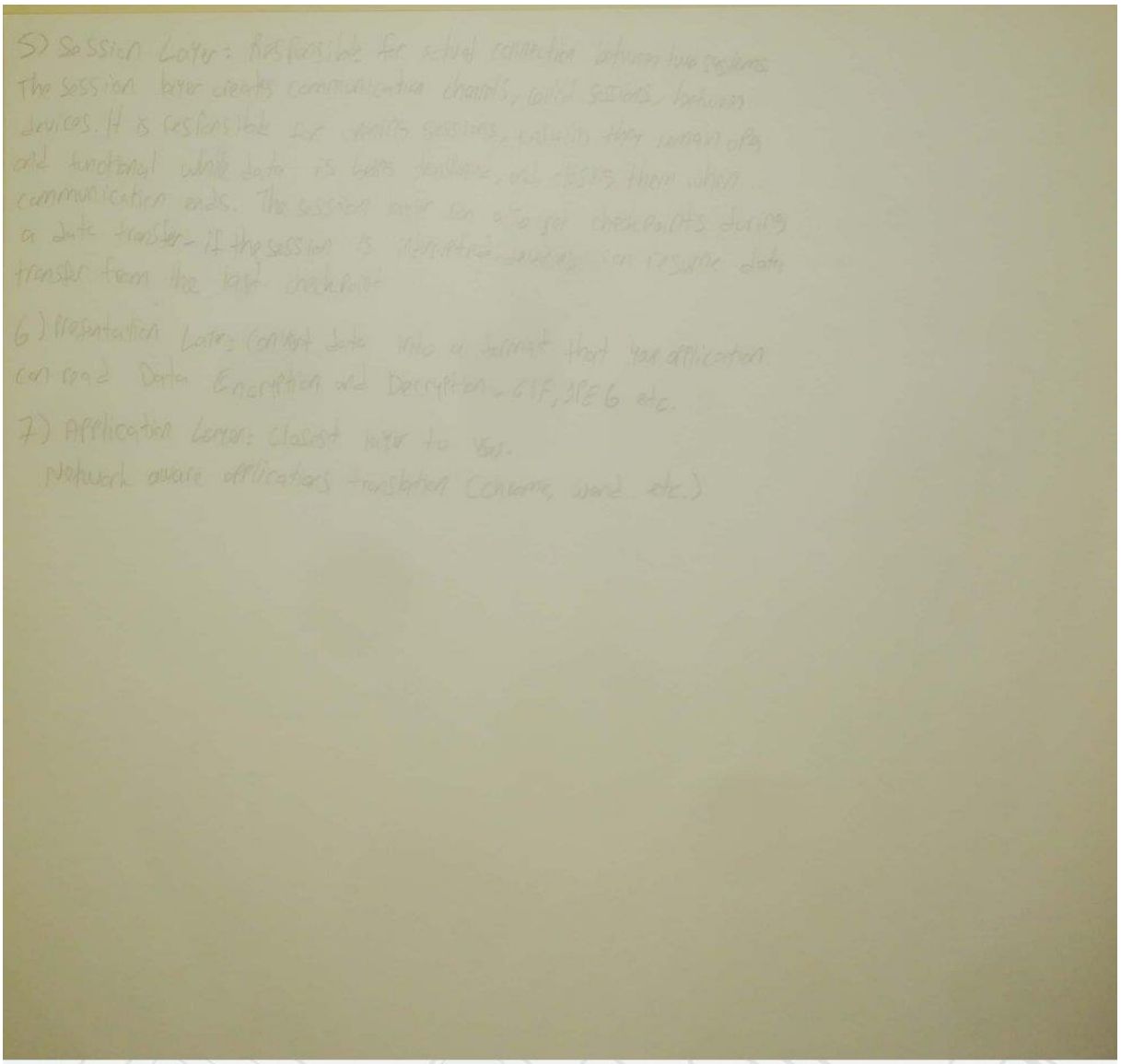
Application
Transport
Network
Network Interface

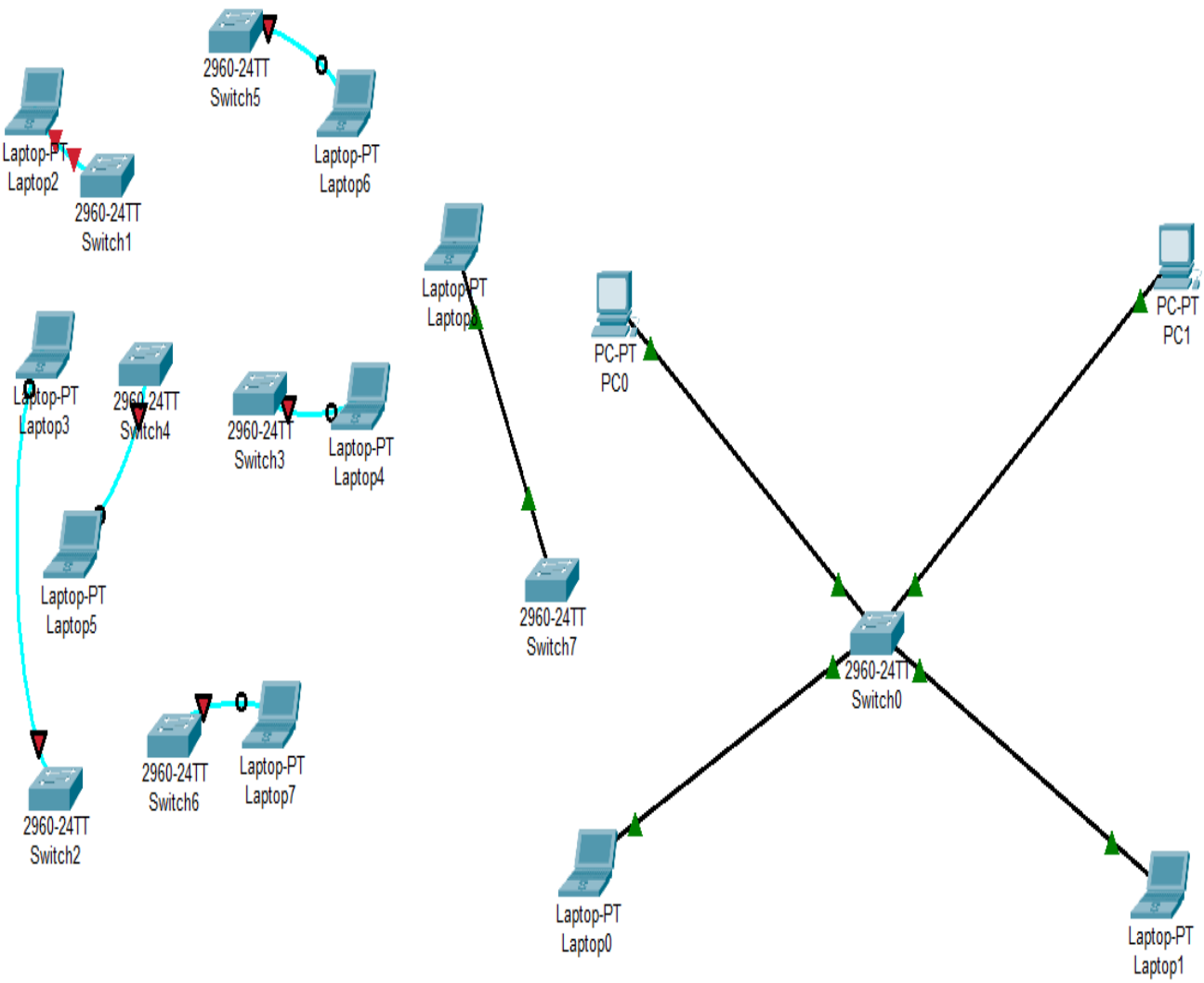
1) Physical Layer: Hardware layer (cards etc) (Transmit for electric, light and radio signals) The Physical layer is responsible for the physical cable or wireless connection between network nodes. Serial or and is, while takins care of bit rate control.

2) Data Link Layer: sets the rules for accessing and using the physical layer. MAC Adress and NIC's and Switches. The data link layer establishes and terminates a connection between two physically-connected nodes on a network. It breaks up packets into frames and sends them from source to destination.

3) Network Layer: IP addresses
(Data routing, managed by this layer) Breaking up segments into network packets, and reassembling the packets on the receiving end. Routing packets by discovering the best path across a physical network. The network layer uses network addresses. (Typically, Internet Protocol addresses) to route packets to a destination node.

4) Transport Layer: Data is bro. Assembly and disassembly area for Packets. Packets gets broken down into individual packets. The transport layer carries out flow control duties data at a rate that matches the connection speed of the receiving device, and error control, checking if data was received incorrectly and if not, requesting it again.




2960-24TT
Switch5
Laptop-PT
Laptop6
Laptop-PT
Laptop2
2960-24TT
Switch1
Laptop-PT
Laptop3
2960-24TT
Switch4
2960-24TT
Switch3
Laptop-PT
Laptop4
Laptop-PT
Laptop5
2960-24TT
Switch6
Laptop-PT
Laptop7
2960-24TT
Switch2
Laptop-PT
Laptop
2960-24TT
Switch7
PC-PT
PC0
PC-PT
PC1
2960-24TT
Switch0
Laptop-PT
Laptop0
Laptop-PT
Laptop1