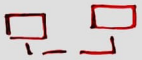
CN Sheet 1

1. Mention 3 differences between Service & Protocol

Service	Protocol
layers 	Peers at the same layer 
• Set of operations Provided by layer to upper one	• Set of rules for message exchange between Peers
• Defines each operation but not how it's imp?	• Used to implement service definitions
• Example: L2 Provides L3 error free, in-order transm.	• Uses Selective Repeat Window Protocol & Checksum

2. Advantages for using layered Protocols

- The abstraction of layers allows
  - → each layer to Provide services to higher ones
  - → without defining how each service is implemented
- This leads to
  1- Flexibility: Can change the implementation of service at layer K without changing anything else.

  2- Maintainability & Scalability (easier compared to if layers were interwined)

3. Reduced Complexity (each layer is now simpler)

3. Mention name & functionality of the bottom 4 layers of the OSI model

4. Transport layer
→ Carry data from source on transmitting node to destination on receiving node
.e.g. specifically identifying the process in the host sending/receiving the data

→ has options for both reliable/unreliable connection

→ Some datalink layer operations can be delegated to transport layer when only needed end-to-end.

Protocols: TCP/IP Device: Computer

3. Network layer
→ routing and logical addressing of hosts

Protocols: IP, L4, CLNP Device: Router

2. Datalink layer
→ framing, error detection & flow control

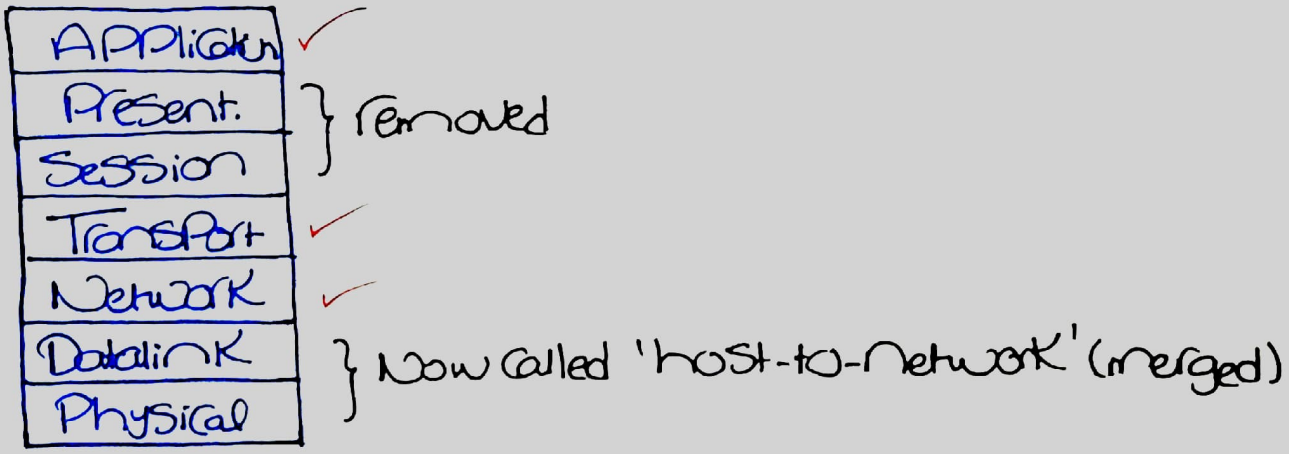
Protocols: HLDC, PPP Device: Switch

1. Physical Layer
→ delivers raw bits across the channel

Protocols: Ethernet, Fiber Devic: Repeaters / Cables

hmm.

4. Mention Names of OSI layers Similar to TCP/IP



5. which OSI layer handles

Deliver raw bits end-to-end Comm.

Physical Transport

Divide raw bitstream into units Determine route from Sour to dest.

Datalink Network

#framing

6. Provide an example for Connectionless VS. Connection-Orient Protocol.

Connection-oriented TCP	Connection-less UDP
• Pre-establish a virtual Path between Sour & dest. (Virtual Circuit)	• No Pre-establishment → Each Packet has enough info to be Sent & routed indp.
• Higher Quality of Servic	• Faster • less affected by Failure (router)

7. True or False

1. Implementation of a Connectionless Servic may Contain two Primitives only ✓
   • Recall that the 5 Servic Primitives of a Connection-Oriented Servic were Listen, Connect, Send, receive, disconnect
   → only need Send/Receive for Connectionless

2. Protocol governs information exchange between adjacent layers ✗
   ↳ Corresponding Peers at same layer

3. IPV6 is a layer 3 Protocol ✓

4. A File System Provides a Connection Oriented Servic (e.g. FTP) ✓
   (Since we care that all data is transferred)