1. Why does the Internet use both MAC and IP addresses?
* IP addresses are hierarchical – meaning that hosts near each other have similar IP addresses, makes routers scalable
* MAC addresses are not hierarchical, they are flat, makes routers not scalable
* You can use either MAC or IP addresses to build a functioning network
  * the reason this is true is that in a connected network, you need only one unique address
* We don't need two addressing mechanisms
* we use the mac address so that nodes can reject undesired packets faster at layer 2.

2. Why do we have retransmissions at both layer 2 (link) and layer 4 (transport)?
* Reliability is covered at both layer 2 and layer 4
* What is the difference in the reliability at the two layers?
* Transport layer – scope of the reliability is end-to-end
* link layer – scope is point-to-point hop-by-hop
* What kind of reliability do we actually want?
- We really care only about end-to-end reliability!!
- Transport layer is good enough!
- Link layer is not good enough!
- Link layer retransmissions are there to make failure recovery faster, more efficient.

3. Why are there checksums at layer 2, layer 3, and layer 4?
Some reasons why you need multiple checksums:
* There can be errors when transferring data between layers.
* Sometimes, data is only processed upto a certain layer, eg, routers do not implement transport layer, switches only process link layer headers
* The checksum is different at different layers.
* The checksum is just an error detecting code
* Just to be safe!P