# Cisco NetAcademy CCNA Introduction to Networking Q&A

**Learning modules 6.1.1 - 7.5.2 and supporting resource documents**

**BESIDES ANSWERING THESE QUESTIONS YOU SHOULD ALSO BE DEVELOPING YOUR CLI REFERENCE if anything new popped up.**

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| **Questions** | **Answer** |
| 1. What is the function of the data link layer? |  |
| 1. Why is the data link layer helpful as technology evolves? |  |
| 1. Explain the function of the two datalink sublayers |  |
| 1. What are common MAC sublayer standards in use today? |  |
| Explain more the role of the MAC sublayer in data encapsulation. |  |
| 1. What role does the router interface play in moving the message along it path and changes in the media form one subnet to the next? |  |
| 1. Does the IETF define the standards for the network access layer? |  |
| 1. Explain the difference between a physical and logical topology. |  |
| 1. What types of WAN topologies will you encounter? Outline their characteristics. |  |
| 1. What types of LAN topologies will you may encounter, including legacy? Outline their characteristics. |  |
| 1. Explain half- and full-duplex communication. What if both sides are not configured for the same communication type? |  |
| 1. Outline the types of network access rules employed to reduce collisions and bottlenecks. |  |
| 1. Ethernet doesn’t need an access method. T or F |  |
| 1. Wireless uses a \_\_\_\_\_ access method. If more than one device transmits at the same time, what is the outcome? |  |
| 1. Explain CSMA/CA. Do either CSMA/CD or CSMA/CA scale well? |  |
| 1. Detail the data link frame, its fields and their purpose and discuss how it changes as it moves through the network. |  |
| 1. Outline specifications of a layer 2 address and how it is used in processing messages. |  |
| 1. What process does the router do on receipt of the message? |  |
| 1. List common WAN protocols in place in past years. What protocols are replacing them now? |  |
| 1. What dictates the layer 2 protocol used? |  |
| 1. What standards define Ethernet operation? What bandwidths area supported? |  |
| 1. Outline the Ethernet MAC sublayer and standards involved. |  |
| 1. Legacy Ethernet used what topologies and were \_\_ duplex? |  |
| 1. Outline the Ethernet frame, fields and their uses. |  |
| 1. Layer 3 addressing uses the base \_\_\_ number system and layer 2 addressing uses the base \_\_ number system. IPv4? And IPV6? Are normally represented in what base number systems? |  |
| 1. What is an alternate way of indicating a number is in hex? |  |
| 1. How are MAC addresses kept unique? What else is it called and where is it stored? 2. If for some reason they aren’t unique, what can you do? |  |
| 1. So for and end device to accept a message, what must match its own? What other message types will it accepts? |  |
| 1. Outline unicast, multicast and broadcast addressing/communication. Also indicate how each might be used and by which protocols or message types. |  |
| 1. Discuss how a switch uses the Ethernet MAC addresses. |  |
| 1. What is the MAC address table? Is it full on power on of the switch? What is another name for this table? |  |
| 1. If a MAC table does not have a device present that is in the message, what is the next process? How does it filter once it knows a port/MAC combination? |  |
| 1. How can a switch port have multiple MACs associated with it? |  |
| 1. If an IP address of a destination is not on the same subnet, what MAC address is in the message to forward the message along? |  |
| 1. Discuss the types of frame forwarding methods used by switches. |  |
| 1. Explain buffering and how it is used. |  |
| 1. What roles does bandwidth and duplex settings play between switch and device? What is auto-negotiation? |  |
| 1. What does auto-MDIX do? |  |
| Read the article: 4 things you need to know about Industrial Ethernet and What Are the Differences in Industrial Ethernet Types? |  |
| What are the protocols called in industrial communication? |  |
| What are key differences in industrial Ethernet LANs? |  |