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Network Media

Introduction to Network Cabling Questions

1. What is TIA/EIA 568?

-A set of telecommunications standards from the Telecommunications Industry Association (TIA), an offshoot of the Electronic Industries Alliance (EIA). The standards address commercial building cabling for telecommunications products and services.

2. What is the difference between TIA 568A and TIA 568B.

-TIA/EIA-568A and -568B are two standards for connecting Category 3 and Category 5 wire to connectors. The only real difference is the 568A uses a color sequence of: white/green, green, white/orange, blue, white/blue, orange, white/brown, brown. The 568B uses a color sequence of: white/orange, orange, white/green, blue, white/blue, green, white/brown, brown. Also, the Pin Outs on the modular connectors are different

3. What is the function of a patch panel?

-The function of a patch panel is to put together unused run cable at a central point before connecting only necessary runs to the switch without the use of crossover cables such as MDI to MDI or MDIX to MDIX. It allows connections to be changed by moving the patch cable.

4. Add these terms to your vocabulary list, Cat 5, Cat 6, and plenum.

Multimode and Singlemode Fiber

1. For signaling, what type of technology does fiber optics employ?

- Fiber optics utilizes the visible spectrum, transmission by light.

2. Is fiber optic cable easy to tap?

- No because it has no RF signal.

3. In what type of situation would you employ multimode fiber optic cable?

-You would use multimode fiber for short range communication for the inside of a building or a building that is right next to each other.

4. What would be a conventional light source for multimode fiber optic cable?

- Lights like LEDs can be used as a light source for multimode fiber optics.

5. In what situation would you employ single mode fiber optic cabling?

- This is generally used for long range communication, up to 100 km without processing.

6. What would be a conventional light source for single mode fiber optic cabling?

- Singlemode fiber uses an expensive light source, laser beams.

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UTP, STP and Coaxial Cabling Questions

1. What type of cable do the terms 10base5, "Thicknet", RG-8, 10base2, and RG-58 describe?

- Coaxial cables.

2. What type of cabling uses conductor pairs that are twisted?

- UTP (unshielded twisted pair) and STP (Shielded twisted pair)

3. What differentiates UTP from STP?

- UTP does not have shielding over the twisted pairs to help in RF high environments. STP has a thin aluminum sheath that surrounds the wire bundle and may also have grounding wire.

4. What is the most common form of Ethernet cabling for Local Area Networks?
- UTP (unshielded twisted pair)

Cable Categories

1. What is the EIA?

- Electronic Industries Alliance develops standards for the computing industry

2. What is the TIA?

- Telecommunications Industry Association develops standards for the telecommunication industry

3. For what is Category 3 cable used?

-10Mbit Ethernet and 4Mbit Token Ring

4. Compare and contrast Cat5 and Cat5e cable.

- Cat 5 goes up to 100 Mbit Ethernet and Cat 5e goes up to 1Gbit Ethernet

5. In what situation would you want to employ Cat6 cable?

- If you need 10Gbit Ethernet over 55 meters

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Crossover and Straight through Cables

1. **What is an Ethernet straight through cable? When would you use it?**

- An Ethernet Cable where the wiring has particular colors and the wires go through the cable. It's used to connect work stations to network devices.

2. **What is the difference between a MDI and a MDIX interface?**

- MDI is an interface cord on either a laptop or desktop while MDIX is a network infrastructure device. The pins on both are mapped. The MDI is the transmit pin and the MIDIX is the receiving.

3. **What is an Ethernet crossover cable? When would you use one?**

- It's a cable that crosses of the transmission and receiving pins on the cable. You would use one if a pin is mapped to another pin which isn't next in sequential order.

4. **If you were going to connect two CSU/DSUs, what type of cable would you use?**

- T1.

Plenum and Non Plenum Cabling

1. **Why wouldn't you want to use regular TWP cable in a ceiling plenum?**

- In case there was a fire, which would naturally spread at a fast rate.

Converting Media

1. **Why do you always need to provide power to the device when you convert from fiber to copper?**

- Copper signals contain an electrical signal.

2. **Can a network signal from almost any type of media be converted to any other type of media?**

- Yes.

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Media Distance and Speed Limitations

1. **What type of cable does 10base5 networking use?**

- A coaxial cable.

2. **How far can you run on a single run of 10baseT?**

- It can run up to 328 feet.

3. **How far can you run on a single run of 100baseTx?**

- It can also run up to 328 feet.

4. **Complete Table 1 by adding the missing cable attributes.**

TIA Category	Ethernet Standard	Cable (Fiber) Type	Speed	Distance
N/A	10base5	RG-8U	10Mbit/s	500 meters
N/A	10base2	RG-58A/U	10Mbit/s	185 meters
Category 5	100base-TX	Multimode	100Mbit/s	100 meters
Category 5e	1000base-T	Multimode	1000Mbit/s	100 meters
N/A	1000base-SX	Multimode	10Gbit/s	300 meters
N/A	1000base-LXf	Single mode	1000Mbit/s	2 kilometers