**ID:\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DCAN202 Week 3 Tutorial – Data Communication and Networking**

# Answer the following questions:

1. Why is fiber optic cable immune to electromagnetic interference?

Ans:

Fiber optic cables are immune to electromagnetic interference (EMI) because they use light signals, rather than electrical signals, to transmit data. This key characteristic eliminates the interaction between the cable and external electromagnetic fields. Specifically:

Material Composition: Fiber optic cables are made of glass or plastic fibers, which do not conduct electricity. This makes them impervious to electromagnetic fields that typically affect metal-based cables.

Transmission Method: Data is transmitted as pulses of light generated by lasers or LEDs, which are unaffected by external electrical noise or interference.

Insulation: The design of fiber optic cables includes a cladding layer that prevents signal leakage and ensures that light signals remain confined within the core.

This immunity to EMI makes fiber optic cables ideal for environments with high electromagnetic activity, such as industrial settings or areas near radio transmitters.

2. What is the primary advantage of coaxial cable compared to twisted pair?

Ans:

The Biggest advantage of coaxial cable compared to twisted pair is its ability to carry a higher bandwidth over longer distances with reduced susceptibility to noise and signal interference. Key advantages include:

Shielding: Coaxial cables have a braided metal shield and foam insulation that protect the inner conductor from external electromagnetic interference, providing better noise resistance compared to twisted pair cables.

Bandwidth Capacity: Coaxial cables can support a wider range of frequencies, making them suitable for applications like cable television and broadband internet.

Distance: Coaxial cables can transmit signals over longer distances without significant signal degradation compared to twisted pair cables.

Cost: Coaxial cables are more expensive and less flexible than twisted pair cables, which are widely used for local area networks (LANs) due to their cost-effectiveness and ease of installation.

1. Install Windows 10 in Oracle Virtual Box.

Use the following video to learn how to download virtual box and install Windows 10 in Virtual Box -

<https://www.youtube.com/watch?v=gKQvaPejxpc>

Attach at least 5 screenshots of this installation with your submission   
  
  
Ans:



















