1. Which topology is used by our computer network lab?
2. How to know your MAC address and IP address?

* check for network configuration
* For windows :ipconfig
* For unix: ifconfig

3. What are the network -supported layer ,user-supported layer ?

4. Find the difference among these /define the following and values for our Computer Network Lab?

1. Latency vs Bandwidth
2. Error Correction Methods vs Error Detection Methods
3. Gateway vs Router
4. Bit Rate vs Baud Rate
5. Coaxial cable vs Optical Fibre

5. What are the various kinds of networking devices used in our Computer Networks Lab?

6. Define these and give examples with respect to our Computer Networks Lab.

A)Multiplexing and types of Multiplexing

B)Round Trip Time

C)Peer -to-Peer Processes

D)MAC Address

E)Issues with the Physical Layer and the responsibilities of Data Link Layer

1. What is the difference between MAC address and IP address? On which layer do they operate?

MAC Address : it is unique for every machine.

Operate on Layer 2 of OSI MODEL( DATA LINK LAYER)

IP Address: it might not unique for 2 devices.

Operate on Layer 3 of OSI MODEL( NETWORK LAYER)

2. What are the differences between guided and unguided transmission media? Give examples.

Guided media: it have wired medium.

Ex. Wi-fi

Unguided media: it have wireless medium.

Ex. Ethernet

1. What is the difference between LAN and WAN?

Area they cover.

4. What is Ethernet and how does it function at the Data Link Layer?

5. We have two computers connected by an Ethernet hub at home. Is this a LAN or a WAN? Explain the reason.

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1. How do error detection and correction mechanisms at the Data Link layer enhance the reliability of data transmission? Discuss the methods used and provide examples of their application in network protocols.

2. Explain how the Logical Link Control (LLC) and Media Access Control (MAC) sub-layers work together to ensure reliable data transmission over a local area network (LAN). Provide examples of protocols used at each sub-layer.

3. Discuss the role of the Physical Layer in ensuring reliable data transmission in wireless sensor networks (WSNs). Consider aspects like power consumption, signal range, and interference.

4. Explain how different types of physical media impact the design and deployment of a large-scale network infrastructure. Consider factors like bandwidth, distance, cost, and interference.

5. Analyze the role of Media Access Control (MAC) protocols in managing channel access in wireless networks. Compare the effectiveness of CSMA/CA and TDMA in terms of collision management and network efficiency.