**Subject: Computer Network Lab (CSL502)**

**Assignment 1**

1. **Define Computer Network. And explain  network topologies in detail.**

Ans: A computer network is a system in which multiple computers are connected to each other to share information ans resources via some connection medium.

Bus Topology:

* All devices are connected to a single central cable, called the bus.
* Data is transmitted in both directions along the bus.
* Devices tap into the bus to send and receive data.
* If the central bus fails, the entire network can be affected.

Star Topology:

* All devices are connected to a central hub or switch.
* Data flows between devices and the central hub.
* If one device fails, the rest of the network remains operational.
* Central hub failure can disrupt the entire network.

Ring Topology:

* Devices are connected in a closed loop, forming a ring.
* Each device is connected to exactly two other devices.
* Data circulates around the ring in one direction.
* Failure of one device can break the entire ring.

Mesh Topology:

* Each device is connected to every other device in the network.
* Can be partial (some devices connected to others) or full (all devices connected to all).
* High redundancy and fault tolerance.
* Complex to implement and manage due to the large number of connections.

Tree (Hierarchical) Topology:

* Hierarchical structure resembling a tree with a root node and branches.
* Consists of interconnected star topologies.
* Provides scalability and centralized control.
* Failure of the root node can disrupt the entire branch.

Hybrid Topology:

* Combines two or more basic topologies.
* Offers a balance of advantages from different topologies.
* Offers flexibility and scalability.

1. **Compare LAN MAN WAN with diagram.**

Ans:

1. **Compare Connection oriented VS Connection less Services.**
2. **Explain Applications of Computer Network.**
3. **Compare OSI And TCP IP.**
4. **Write a short  note on Guided Transmission Media with Suitable Diagram ( Any two)**
5. **State advantages and disadvantages of unguided media.**
6. **Explain Components of data Communication System with diagram.**
7. **Explain Services of DLL in detail.**
8. **What is error detection and correction in detail.**
9. **A bit hamming code is received as 1110101. What is the correct code?**
10. **Explain Sliding window protocol in detail with diagram.**
11. **Differentiate between CSMA CA and CSMA CD**