

# Solved Question Paper

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# 1.d) Explain the various topologies for a networking system.

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The topology is the geometric arrangement (either physically or logically) of the linking devices (usually called nodes) and the links, connecting the individual computers or nodes together.

- Five basic topologies:
  1. Bus topology
  2. Ring topology
  3. Star topology
  4. Mesh topology
  5. Combined topologies

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## 1. Bus topology :

The physical Bus **Network Topology** is the simplest and **most widely used** of the network designs.

In bus topology, there is a single bus that carries all the data to the entire network. A bus is a single continuous communication cable to which all the computers are connected. A cable or bus runs throughout the office to which all the workstations are connected. Bus topology is also known as linear bus or line bus.

When one workstation wants to talk to another, the message or signal travels down the bus in both directions. Each one reads the message to see if it matches its address. Bus topology is a passive topology. It means that the computers connected to the bus amplify the signal on the bus.

## Advantages :

- Easy to set up.
- Any workstation can be easily moved to another location as bus runs throughout the office.
- If one computer on the bus fails, it does not affect the rest of the traffic on the bus. The entire network can be down only if the bus has a break.
- It requires less cable length than a star topology.
- It is cheaper than the other network options.
- Cost is less as only one main cable is required and least amount of cable is required to connect computers.
- Expansion is easier. New node can be easily added by using a connector.

