



4.9.2.1 Network Topology

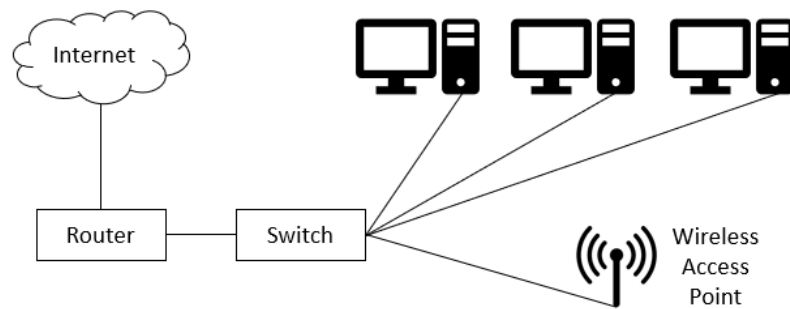
1) Explain the difference between a physical topology and a logical topology.

[2 marks]

- **Physical:** The physical layout of the cabling/connections between devices on a network.
 - **Logical:** How data/packets flow around a network.
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2) State the name of a physical topology used in the LAN in Figure 1.

Figure 1



[1 mark]

- **Star topology/network**
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3) Explain the operation of a physical star topology.

[2 marks]

- Every device is directly connected to a central node/switch/hub
 - Every device sends data via the central node
 - The switch sends packets to the intended recipient only // The hub sends packets to every device
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4) Explain the operation of a logical bus network topology.

[3 marks]

- A node broadcasts data across the entire network;
 - Any nodes on the network receive/read the data;
 - A node examines the received data to check if it is the intended recipient;
 - Only one node can successfully transmit data at a time
// Nodes use a shared transmission medium;
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5) Explain how a physical topology can behave logically as a bus network.

[2 marks]

- Use a bus transmission protocol;
 - Use appropriate physical switching so that data can be transmitted as if the devices share a bus;
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