Experiment 1 - Oral Questions and Answers

Q1. What is a network topology?

Answer: Network topology is the way or layout in which computers and devices are connected in a network.

Q2. What are the two types of network topology?

Answer: Physical topology and Logical topology.

Q3. Name different types of topologies.

Answer: Bus, Star, Ring, Mesh, Tree, and Hybrid topologies.

Q4. What is Cisco Packet Tracer?

Answer: A network simulation tool used to design and test computer networks virtually.

Q5. Why do we use Packet Tracer?

Answer: To practice networking concepts without using real hardware.

Q6. What is Bus topology?

Answer: All computers are connected in a single line (backbone cable).

Q7. One advantage of Bus topology?

Answer: It is simple and cheap to install.

Q8. One disadvantage of Bus topology?

Answer: If the main cable fails, the whole network stops working.

Q9. What is Star topology?

Answer: All devices are connected to a single central device (hub or switch).

Q10. One advantage of Star topology?

Answer: Easy to add or remove devices without affecting others.

Q11. One disadvantage of Star topology?

Answer: If the central hub/switch fails, the entire network goes down.

Q12. What is Mesh topology?

Answer: Every device is connected to every other device directly.

Q13. One advantage of Mesh topology?

Answer: Network does not fail easily because there are multiple paths.

Q14. One disadvantage of Mesh topology?

Answer: It requires a lot of cables and is expensive to install.

Q15. What is transmission media?

Answer: It is the path through which data travels from sender to receiver.

Q16. What are the two types of transmission media?

Answer: Guided (Wired) and Unguided (Wireless).

Q17. What is guided media?

Answer: It uses physical cables or wires to send data signals.

Q18. Examples of guided media?

Answer: Twisted pair cable, Coaxial cable, Optical fiber.

Q19. What is twisted pair cable?

Answer: Two copper wires twisted together to reduce interference.

Q20. What is coaxial cable?

Answer: A single copper wire with insulation and metallic covering.

Q21. What is optical fiber cable?

Answer: It uses glass fibers and light signals for data transmission.

Q22. What is unguided media?

Answer: No cables; data travels through air using electromagnetic waves.

Q23. Examples of unguided media?

Answer: Radio waves, Microwaves, Infrared.

Q24. What is the frequency range of radio waves?

Answer: 3 KHz to 1 GHz.

Q25. Where are radio waves used?

Answer: In radios, cordless phones, and wireless communication.

Q26. What are microwaves?

Answer: High-frequency signals that travel in straight lines between antennas.

Q27. Frequency range of microwaves?

Answer: 1 GHz to 300 GHz.

Q28. Where are microwaves used?

Answer: In mobile communication and satellite links.

Q29. What is infrared transmission?

Answer: Uses light for short distances; used in remotes and wireless mouse.

Q30. What is a Hub?

Answer: A device that connects multiple computers and sends data to all of them.

Q31. What is a Switch?

Answer: A smarter device that sends data only to the target device.

Q32. Difference between Hub and Switch?

Answer: Hub sends data to all; Switch sends only to the correct one.

Q33. In which OSI layer does transmission media work?

Answer: It works in the Physical Layer (Layer 1).

Q34. What does the Physical Layer do?

Answer: It transmits raw bits (0s and 1s) through cables or wireless signals.

Q35. Which cable is used to connect PC to switch?

Answer: Copper straight-through cable.

Q36. Which cable is used to connect switch to switch?

Answer: Copper cross-over cable.

Q37. Which devices are used to create a topology in Packet Tracer?

Answer: PCs, switches, hubs, routers, and cables.

Q38. How can you check connectivity between two PCs?

Answer: By using the 'ping' command in the PC command prompt.

Q39. What did you learn from this experiment?

Answer: How to create topologies and understand transmission media.

Q40. Which topology is most commonly used today?

Answer: Star topology.

Q41. Which medium is faster copper or fiber optic?

Answer: Fiber optic is faster and can carry more data.

Q42. Which transmission media is more secure wired or wireless?

Answer: Wired is more secure because signals stay inside cables.