NETWORK DEVICES INTERVIEW QUESTIONS

1.What is a router and what is its primary function in a network?

Answer: A router is a network device that forwards data packets between computer networks. Its primary function is to route traffic, directing data from the source to its destination across interconnected networks.

2.How does a switch differ from a router?

Answer: A switch operates within a single network, directing data to specific devices based on MAC addresses, while a router connects multiple networks and routes data based on IP addresses.

3.What are the main types of switching methods used in network switches?

Answer: The main types of switching methods are store-and-forward, cut-through, and fragment-free.

4.Explain the store-and-forward switching method.

Answer: Store-and-forward switching involves the switch receiving the entire data packet, checking it for errors, and then forwarding it to the destination. This method ensures error-free transmission.

5.What is a hub and how does it function in a network?

Answer: A hub is a basic networking device that connects multiple Ethernet devices, making them act as a single network segment. It broadcasts incoming data packets to all ports, regardless of the destination.

6.Compare a hub and a switch in terms of data traffic management.

Answer: A hub broadcasts data to all connected devices, leading to potential collisions and inefficiencies. A switch, however, sends data only to the specific device it is intended for, reducing collisions and improving performance.

7.What is an access point (AP) and what role does it play in a wireless network?

Answer: An access point (AP) is a device that allows wireless devices to connect to a wired network using Wi-Fi. It acts as a bridge between the wireless and wired portions of the network.

8.Define a network gateway and its purpose.

Answer: A gateway is a device that connects two different networks, often using different protocols. It acts as a translator, enabling communication between the networks.

9.What is the function of a bridge in networking?

Answer: A bridge connects and filters traffic between two or more network segments at the data link layer (Layer 2), helping to reduce network traffic and divide collision domains.

10.Describe the main function of a modem.

Answer: A modem (modulator-demodulator) converts digital data from a computer into analog signals for transmission over telephone lines and vice versa, enabling internet connectivity.

11. How does a gateway differ from a router?

Answer: While both route data, a gateway operates at higher OSI layers (Layer 4 and above) and can translate between different network protocols, whereas a router typically operates at Layer 3 and forwards packets based on IP addresses.

12. What are VLANs and how are they used in network switches?

Answer: VLANs (Virtual Local Area Networks) are used in switches to segment a physical network into multiple logical networks, improving security and reducing broadcast domains.

13. What is a managed switch, and how does it differ from an unmanaged switch?

Answer: A managed switch provides advanced features like VLANs, QoS, and SNMP, allowing for greater control and configuration. An unmanaged switch offers basic connectivity with no configuration options.

14. Explain the term "collision domain" and how switches help to manage them.

Answer: A collision domain is a network segment where data packets can collide. Switches reduce collision domains by creating a separate domain for each connected device, minimizing collisions and improving network performance.

15. What is the role of a firewall in network security?

Answer: A firewall monitors and controls incoming and outgoing network traffic based on predetermined security rules, acting as a barrier between trusted and untrusted networks.

16. How does a wireless access point (AP) differ from a wireless router?

Answer: An AP provides wireless connectivity to devices within a network, while a wireless router combines the functionality of a router (routing data between networks) with an AP to connect devices to the internet.

17. What are the differences between half-duplex and full-duplex communication in networking?

Answer: Half-duplex communication allows data transmission in both directions but not simultaneously. Full-duplex allows simultaneous data transmission and reception, improving efficiency.

18. How does a network bridge differ from a switch?

Answer: A bridge connects two network segments and filters traffic at the data link layer, often with fewer ports. A switch performs similar functions but with more ports and often more advanced features like VLANs.

19. What is a Layer 3 switch and how does it differ from a traditional switch?

Answer: A Layer 3 switch combines the functions of a switch and a router, performing both Layer 2 switching and Layer 3 routing, allowing for inter-VLAN routing and more advanced network management.

20. Explain the purpose of a modem in a home network.

Answer: In a home network, a modem connects to the internet service provider (ISP) and converts digital data to a form that can be transmitted over the ISP's infrastructure, providing internet access to the home network.

21.What is Power over Ethernet (PoE) and its advantages?

Answer: PoE allows network cables to carry electrical power, enabling devices like IP cameras and wireless access points to receive power and data through a single cable, simplifying installation and reducing costs.

22.How do repeaters work in a network?

Answer: Repeaters regenerate and amplify signals to extend the transmission distance of a network, preventing signal degradation over long distances.

23.What is the difference between a modem and a router?

Answer: A modem connects to the ISP and converts signals for internet access. A router connects multiple devices within a network and directs data traffic between them and the internet.

24.Why might you use a bridge in a network?

Answer: A bridge is used to connect and segment networks, reduce traffic, extend the network, and manage collision domains, improving overall network efficiency.

25.What is the primary use of a gateway in an enterprise network?

Answer: In an enterprise network, a gateway connects different network architectures, protocols, and environments, facilitating communication and data exchange between disparate systems and networks.