**Module 10: Networking**

**13. A Cisco Catalyst switch connects to what should be individual user PCs. Each port has the same port security configuration, configured as follows:**

**interface range gigabit Ethernet 0/1 - 24** **switchport mode access** **switchport port-security** **switchport port-security mac-address sticky**

**Which of the following answers describe the result of the port security configuration created with these commands? (Choose two)**

* **A. Prevents unknown devices with unknown MAC addresses from sending data through the switch ports.**
* **C. Will allow any one device to connect to each port, and will save that device’s MAC address into the startup-config.**
* **Explanation**:
  + The **mac-address sticky** option allows the switch to dynamically learn and save the MAC addresses of the connected devices into the startup-config.
  + Port security ensures that only the learned (sticky) MAC addresses are allowed, preventing unknown devices from accessing the network.

**14. What is the Administrative Distance of internal EIGRP routes?**

* **B. 90**
* **Explanation**: The **administrative distance** for internal EIGRP (Enhanced Interior Gateway Routing Protocol) routes is **90**. This value is used to determine the reliability of the route.

**15. When a subnet mask is presented in binary, what do the binary 1s represent?**

* **A. The network portion of an associated address**
* **Explanation**: The binary 1s in the subnet mask represent the **network portion** of the associated IP address. The remaining bits (binary 0s) represent the host portion.

**16. Which switch would STP choose to become the root bridge in the selection process?**

* **A. 32768: 11-22-33-44-55-66**
* **Explanation**: STP (Spanning Tree Protocol) selects the root bridge based on the **lowest bridge ID**, which is a combination of priority and MAC address. The switch with the lowest combination wins. Here, the switch with the **lowest priority and MAC address** is selected.

**17. Which of the following devices is used by the service provider to provide WAN services?**

* **D. CSU/DSU**
* **Explanation**: A **CSU/DSU** (Channel Service Unit/Data Service Unit) is used by service providers to connect digital circuits to customer equipment in WAN environments.

**18. Your Cisco IOS router is acting as a DHCP server. Which command will display the addresses that have been handed out to clients on the LAN?**

* **A. show ip dhcp assignments**
* **Explanation**: The **show ip dhcp assignments** command displays the IP addresses that have been allocated to DHCP clients on the network.

**19. Which of the following commands would you use to enable EIGRP only on those interfaces with an IP address from 10.1.1.0 through 10.1.1.63?**

* **A. network 10.1.1.0 0.0.0.63**
* **Explanation**: The **network** command in EIGRP uses a wildcard mask to specify which interfaces should participate in EIGRP. The wildcard mask **0.0.0.63** matches the range **10.1.1.0 through 10.1.1.63**.

**20. R3 has a static route configured that points toward the service provider. What command could you use to have R3 advertise an OSPFv3 default route to the internal network, regardless of whether R3 had its default static route?**

* **E. Have R3 use the command default-information originate always in OSPFv3 router configuration mode.**
* **Explanation**: The command default-information originate always forces the router to advertise a default route to other routers, even if the static route does not exist.

**21. You are configuring dynamic NAT on your Cisco IOS router. Which command is used to verify the interfaces that are being used as the outside interface and the inside interface?**

* **D. show ip interface brief**
* **Explanation**: The **show ip interface brief** command displays the status and configuration of interfaces, including whether they are designated as inside or outside interfaces for NAT.

**22. When using the “show EtherChannel summary” command, what does the “u” flag signify?**

* **D. Unsuitable for bundling**
* **Explanation**: The "u" flag in the EtherChannel summary output indicates that the link is **unsuitable for bundling**, meaning it cannot be added to an EtherChannel group.

**23. Which command could you enter to encrypt passwords?**

* **D. All of the above**
* **Explanation**: All of the listed commands (**enable secret**, **username {username} secret {password}**, and **service password-encryption**) are used to encrypt passwords in Cisco IOS.

**24. You are setting up a Cisco IOS router as a DHCP server. Which command is used to identify the IPv4 addresses that will be in the DHCP pool?**

* **A. network**
* **Explanation**: The **network** command specifies the range of IP addresses that will be included in the DHCP pool.

**25. Which of the following statements are true regarding the processing of ACLs that have been applied to router interfaces? (Choose two)**

* **A. Inbound ACLs will be processed before the routing table lookup occurs**
* **C. Outbound ACLs will be processed after the routing table lookup has occurred**
* **Explanation**:
  + **Inbound ACLs** are processed before the routing table lookup, and **outbound ACLs** are processed after the lookup.

**26. Imagine you configured OSPFv2 in a small lab network. Which of the following answers list a condition that could keep the routers in your lab from learning all the routes to all the IPv4 routes in your small lab network? (Choose two)**

* **A. An ACL could be blocking router advertisements.**
* **C. Any physical layer problem that would prevent two neighboring routers from being able to ping each other’s IPv4 addresses in the subnet that exists between the two routers.**
* **Explanation**:
  + **ACLs** could block OSPF routing updates, and **physical layer issues** could prevent routers from establishing neighbors and exchanging routes.

**27. Which statements describe neighbor discovery functionality in IPv6? (Choose two)**

* **A. Determines the link layer address of a neighbor**
* **D. Queries for duplicate addresses**
* **Explanation**: Neighbor Discovery Protocol (NDP) in IPv6 is responsible for determining the **link layer address** and checking for **duplicate addresses** on the network.

**28. Which IPv6 prefix will the typical enterprise network receive from the service provider?**

* **E. /48**
* **Explanation**: Typically, an enterprise network receives a **/48** prefix from the service provider, which allows for a large number of subnets within the organization.

**29. How should a switch be configured so that it could be accessed remotely?**

* **C. Configure a gateway for the switch**
* **Explanation**: To access a switch remotely, it needs to have an **IP address** and **gateway** configured, enabling remote access through management protocols like SSH or Telnet.

**30. Refer to the exhibit. A network technician is asked to design a small network with redundancy. The exhibit represents this design, with all hosts configured in the same VLAN. What conclusions can be made about this design?**

* **B. Spanning-tree will need to be used.**
* **D. The connection between switches should be a trunk.**
* **E. The router interfaces must be encapsulated with the 802.1Q protocol.**
* **Explanation**:
  + To prevent loops in a redundant network, **Spanning Tree Protocol (STP)** is required.
  + **Trunking** allows for multiple VLANs to traverse between switches, and **802.1Q** is the standard for VLAN tagging in trunk links.