Chapter 2: Quiz – Spanning Tree Protocol (Answers) CCNPv8 ENCOR

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13. What additional information is contained in the 12-bit extended system ID of a BPDU?

- MAC address
- **VLAN ID**
- IP address
- port ID

Explanation: The BPDU has three fields; the bridge priority, the extended system ID, and the MAC address. The extended system ID contains 12 bits that identify the VLAN ID.

14. Refer to the exhibit. Which switch will be the root bridge after the election process is complete?
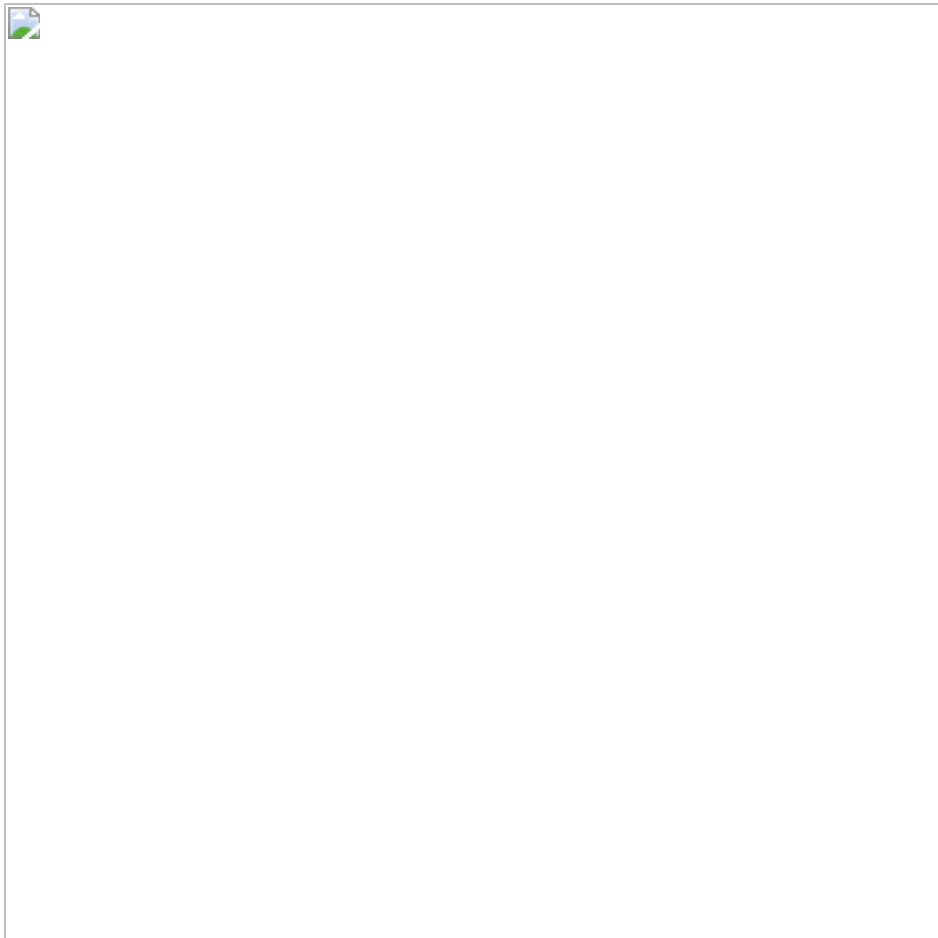
- S1
- **S2**
- S3
- S4

Explanation: The root bridge is determined by the lowest bridge ID, which consists of the priority value and the MAC address. Because the priority values of all of the switches are identical, the MAC address is used to determine the root bridge. Because S2 has the lowest MAC address, S2 becomes the root bridge.

15. Which STP port type is permitted to forward traffic, but is not the port closest to the root bridge?

- root port
- backup port
- alternate port
- **designated port**

Explanation: A designated port is a nonroot port that can still forward traffic. The root port is the port on the switch that has the lowest cost to the root bridge. Alternate and backup ports are types of blocking ports which do not forward traffic.

16. What is the value used to determine which port on a non-root bridge will become a root port in a STP network?

- the highest MAC address of all the ports in the switch
- the lowest MAC address of all the ports in the switch
- the VTP revision number
- **the path cost**

Explanation: STP establishes one root port on each non-root bridge. The root port is the lowest-cost path from the non-root bridge to the root bridge, indicating the direction of the best path to the root bridge. This is primarily based on the path cost to the root bridge.

17. What is the purpose of STP?

- **STP blocks redundant paths to prevent Layer 2 loops.**
- It prevents unauthorized users from accessing a wireless network.
- It is used to automatically create trunk links between two devices.
- It ensures that only a specific number of devices can be connected to a port.

Explanation: The purpose of the Spanning Tree Protocol (STP) is to break Layer 2 loops in the network so that frames do not loop endlessly.

18. Which RSTP ports are connected to end devices?

- trunk ports
- designated ports
- root ports
- **edge ports**

Explanation: Switch ports that connect to host devices are RSTP edge ports and will immediately transition to the forwarding state when the port is enabled.

19. If no bridge priority is configured in PVST, which criteria is considered when electing the root bridge?

- lowest IP address
- **lowest MAC address**
- highest IP address
- highest MAC address

Explanation: Only one switch can be the root bridge for a VLAN. The root bridge is the switch with the lowest BID. The BID is determined by priority and the MAC address. If no priority is configured then all switches use the default priority and the election of the root bridge will be based on the lowest MAC address.

20. In which two port states does a switch learn MAC addresses and process BPDUs in a PVST network? (Choose two.)

- blocking
- disabled
- **forwarding**
- **learning**
- listening

Explanation: Switches learn MAC addresses at the learning and forwarding port states. They receive and process BPDUs at the blocking, listening, learning, and forwarding port states.

21. An administrator is troubleshooting a switch and wants to verify if it is a root bridge. What command can be used to do this?

- **show spanning-tree**
- show running-config
- show startup-config
- show vlan

Explanation: Of all the commands that are listed, only the correct option, **show spanning-tree**,displays STP root bridge information.

22. Which port role will be assigned to all active trunk switch ports on the root bridge of a Layer 2 switched domain?

- root port
- **designated port**
- alternate port
- disabled port

Explanation: All ports on the root bridge are selected as designated ports. Root ports are selected on all nonroot bridges.

23. During the implementation of Spanning Tree Protocol, all switches are rebooted by the network administrator. What is the first step of the spanning-tree election process?

- Each switch with a lower root ID than its neighbor will not send BPDUs.
- **All the switches send out BPDUs advertising themselves as the root bridge.**
- Each switch determines the best path to forward traffic.
- Each switch determines what port to block to prevent a loop from occurring.

Explanation: After a Cisco switch boots, it will send out BPDUs containing its individual BID and the root ID for the network. By default, the initial root ID at bootup will be the ID of that individual switch. After a root bridge is elected, port states and paths are chosen.

24. Which three port states are used by Rapid PVST+? (Choose three.)

- **discarding**
- blocking
- trunking
- listening
- **learning**
- **forwarding**

Explanation: The Rapid PVST+ port states are discarding, learning, and forwarding.

25. By default, how often does a Cisco switch that is using RSTP send out BPDU frames?

- **every 2 seconds**
- every 4 seconds
- every 5 seconds
- every 10 seconds

Explanation: By default, a Cisco switch that is running RSTP sends BPDU messages every 2 seconds.