

Q1. Layer 2 switching operates primarily at which OSI layer?

- A. Network
- B. Transport
- C. Data Link
- D. Physical

Q2. The main purpose of Spanning Tree Protocol (STP) is to:

- A. Increase switch bandwidth
- B. Prevent routing loops
- C. Prevent switching loops
- D. Improve encryption

Q3. The default STP priority value for a Cisco switch is:

- A. 4096
- B. 0
- C. 32768
- D. 61440

Q4. A port in STP that forwards traffic is called:

- A. Root Port
- B. Blocking Port
- C. Forwarding Port
- D. Disabled Port

Q5. Which STP version supports VLAN-based spanning trees?

- A. STP
- B. RSTP
- C. MSTP
- D. PVST+

Q6. STP prevents loops by placing redundant links into which state?

- A. Routing
- B. Blocking
- C. Forwarding
- D. Static

Q7. The bridge ID consists of priority and:

- A. MAC address
- B. VLAN number
- C. IP address
- D. Port number

Q8. What command verifies STP status on a Cisco switch?

- A. show spanning-tree
- B. show vlan brief
- C. show interfaces
- D. show mac address-table

Q9. RSTP corresponds to which IEEE standard?

- A. 802.1D
- B. 802.1Q
- C. 802.1w
- D. 802.3

Q10. In STP, the switch with the lowest Bridge ID becomes:

- A. Backup root bridge
- B. Designated switch
- C. Non-root switch
- D. Root bridge

SECTION B — MEDIUM (15 MCQs)

Q11. Which STP port role identifies the switch port with the best path to the root bridge?

- A. Designated Port
- B. Blocking Port
- C. Root Port
- D. Disabled Port

Q12. What happens if two switches have the same priority during STP election?

- A. Higher MAC wins
- B. Lower MAC wins
- C. Random selection
- D. Manual selection

Q13. A switch can be forced to become root by:

- A. Lowering its MAC address
- B. Increasing its path cost
- C. Reducing its priority value
- D. Using a static route

Q14. Path cost in STP is based on:

- A. Port number
- B. Link bandwidth
- C. MAC address
- D. Switch priority

Q15. In RSTP, which port state is NOT used?

- A. Forwarding
- B. Blocking
- C. Learning
- D. Discarding

Q16. Which port role exists only in RSTP?

- A. Root Port
- B. Backup Port
- C. Designated Port
- D. Forwarding Port

Q17. PVST+ creates a separate STP instance for:

- A. Each port
- B. Each VLAN
- C. Each subnet
- D. Each switch

Q18. What is the primary benefit of MSTP?

- A. Faster forwarding
- B. One instance for many VLANs
- C. More bandwidth
- D. IPv6 support

Q19. To configure switch priority in Cisco IOS, which command is used?

- A. spanning-tree priority <value>
- B. switch priority <value>
- C. ip spanning-tree priority <value>
- D. spanning-tree mode pvst <value>

Q20. Which port is always in forwarding state on the root bridge?

- A. Root Port
- B. Alternate Port
- C. Designated Port
- D. Backup Port

Q21. BPDU stands for:

- A. Bridge Protocol Data Unit
- B. Broadcast Protocol Data Unit
- C. Basic Packet Distribution Unit
- D. Base Port Delivery Unit

Q22. A topology change in STP is detected when:

- A. BPDUs stop being sent
- B. A port transitions to forwarding state
- C. MAC table fills up
- D. VLAN mismatch occurs

Q23. The switch with multiple equal-cost paths selects root port by choosing:

- A. Lowest priority path
- B. Lowest port ID
- C. Lowest MAC address
- D. Highest bandwidth

Q24. Which STP timer determines how long a port stays in Listening state?

- A. Max-age
- B. Forward delay
- C. Hello time
- D. Aging time

Q25. Which command displays per-VLAN STP information?

- A. show spanning-tree vlan <id>
- B. show stp vlan-info
- C. show vlan spanning
- D. show spanning-tree id

SECTION C — HARD (15 MCQs)

Q26. In a topology with three switches, what condition ensures a single root bridge?

- A. Unique MAC addresses
- B. Only one switch running STP
- C. Lowest bridge ID among all switches
- D. Highest bandwidth switch wins

Q27. A switch detects a superior BPDU on a designated port. What happens next?

- A. Port is disabled
- B. Port becomes root port
- C. Port becomes alternate port
- D. Port switches to VLAN trunking

Q28. In STP, the port cost for a 1 Gbps link (default IEEE value) is:

- A. 10
- B. 19
- C. 4
- D. 1

Q29. MSTP maps VLANs into:

- A. Root ID groups
- B. MST regions
- C. Instances (MSTIs)
- D. STP domains

Q30. If you configure a switch with priority 0 in PVST+, it will:

- A. Always become root for all VLANs
- B. Become root only if MAC is lower
- C. Not affect the root bridge
- D. Disable STP

Q31. Which STP feature allows immediate transition to forwarding for access ports?

- A. UplinkFast
- B. BackboneFast
- C. PortFast
- D. EtherChannel

Q32. An RSTP alternate port corresponds to which STP port state?

- A. Blocking
- B. Learning
- C. Forwarding
- D. Listening

Q33. A switch receives BPDUs from two neighbors. To select root port, it compares:

- A. MAC address only
- B. Bridge IDs + Path cost
- C. Only priority
- D. Hello timer

Q34. A topology change notification (TCN) BPDU is sent when:

- A. The root bridge reboots
- B. A port goes down
- C. A designated port transitions to forwarding
- D. A new MAC address is learned

Q35. What happens when STP detects a unidirectional link failure?

- A. Root bridge changes
- B. Loop guard blocks the port
- C. STP shuts down the switch
- D. PortFast activates

Q36. In MSTP, all switches in a region MUST have matching:

- A. Domain name, revision number, VLAN mapping
- B. MAC address
- C. VTP domain
- D. Root cost

Q37. STP uses which method to break ties when priority and MAC are equal?

- A. Lowest IP address
- B. Lowest port ID

- C. Highest port ID
- D. Lowest VLAN ID

Q38. Which command forces a switch to be root in all VLANs (Cisco)?

- A. spanning-tree vlan 1-4094 root primary
- B. spanning-tree priority 0
- C. set spanning-root all
- D. spanning-tree vlan root enable

Q39. If a blocked port receives superior BPDU, the port transitions to:

- A. Alternate
- B. Root
- C. Designated
- D. Disabled

Q40. To manually create an STP topology where Switch S2 becomes root bridge, you must:

- A. Increase S2 priority above default
- B. Lower S2 priority below all others
- C. Change S2 MAC address
- D. Enable RSTP on S2 only