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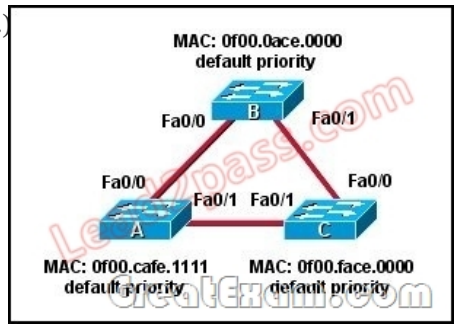
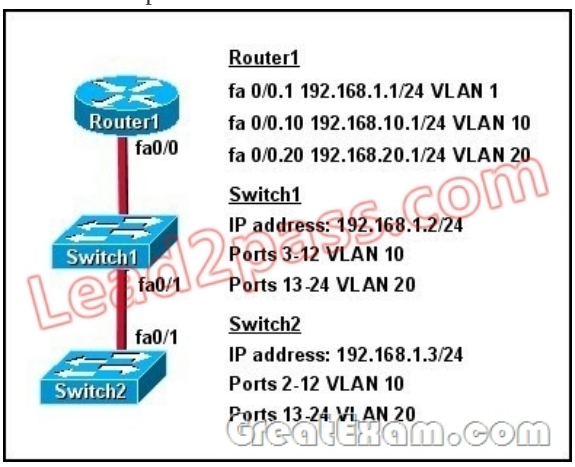
QUESTION 41Refer to the topology shown in the exhibit. Which ports will be STP designated ports if all the links are operating at the same bandwidth? (Choose three.)

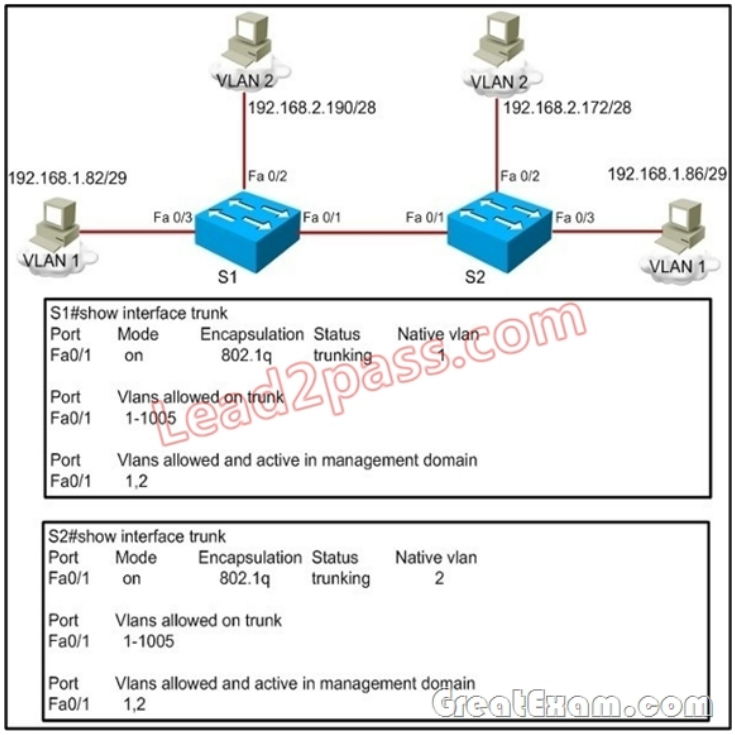


A. Switch A - Fa0/0B. Switch A - Fa0/1C. Switch B - Fa0/0D. Switch B - Fa0/1E. Switch C - Fa0/0F. Switch C - Fa0/1 Answer: BCDExplanation:This question is to check the spanning tree election problem.1. First, select the root bridge, which can be accomplished by comparing the bridge ID, the smallest will be selected. Bridge-id= bridge priority + MAC address. The three switches in the figure all have the default priority, so we should compare the MAC address, it is easy to find that SwitchB is the root bridge.2. Select the root port on the non-root bridge, which can be completed through comparing root path cost. The smallest will be selected as the root port.3. Next, select the Designated Port. First, compare the path cost, if the costs happen to be the same, then compare the BID, still the smallest will be selected. Each link has a DP. Based on the exhibit above, we can find DP on each link. The DP on the link between SwitchA and SwitchC is SwitchA'Fa0/1, because it has the smallest MAC address. QUESTION 42Refer to the exhibit. How should the FastEthernet0/1 ports on the 2950 model switches that are shown in the exhibit be configured to allow connectivity between all devices?



A. The ports only need to be connected by a crossover cable.B. SwitchX(config)# interface fastethernet 0/1SwitchX(config-if)# switchport mode trunkC. SwitchX(config)# interface fastethernet 0/1SwitchX(config-if)# switchport mode access SwitchX(config-if)# switchport access vlan 1D. SwitchX(config)# interface fastethernet 0/1SwitchX(config-if)# switchport mode trunkSwitchX(config-if)# switchport trunk vlan 1SwitchX(config-if)# switchport trunk vlan 10SwitchX(config-if)# switchport trunk vlan 20 Answer: BExplanation:IN order for multiple VLANs to cross switches, the connection between the switches must be a trunk. The "switchport mode trunk" command is all that is needed, the individual VLANs should not be listed over that trunk interface. QUESTION 43Which three statements about RSTP are true? (Choose three.) A. RSTP significantly reduces topology reconverging time after a link failure.B. RSTP expands the STP port roles by adding the alternate and backup roles.C. RSTP port states are blocking, discarding, learning, or forwarding.D. RSTP provides a faster transition to the forwarding state on point-to-point links than STP does.E. RSTP also uses the STP proposal-agreement sequence.F. RSTP uses the same timer-based process as STP on point-to-point links. Answer: ABDExplanation:One big disadvantage of STP is the low convergence which is very important in switched network. To overcome this problem, in 2001, the IEEE with document 802.1w introduced an evolution of the Spanning Tree Protocol: Rapid Spanning Tree Protocol (RSTP), which significantly reduces the convergence time after a topology change occurs in the network. While STP can take 30 to 50 seconds to transit from a blocking state to a forwarding state, RSTP is typically able to respond less than 10 seconds of a physical link failure.RSTP works by adding an alternative port and a

backup port compared to STP. These ports are allowed to immediately enter the forwarding state rather than passively wait for the network to converge.RSTP bridge port roles:* Root port - A forwarding port that is the closest to the root bridge in terms of path cost* Designated port - A forwarding port for every LAN segment* Alternate port - A best alternate path to the root bridge. This path is different than using the root port. The alternative port moves to the forwarding state if there is a failure on the designated port for the segment.* Backup port - A backup/redundant path to a segment where another bridge port already connects. The backup port applies only when a single switch has two links to the same segment (collision domain). To have two links to the same collision domain, the switch must be attached to a hub.* Disabled port - Not strictly part of STP, a network administrator can manually disable a port QUESTION 44Refer to the exhibit. A frame on VLAN 1 on switch S1 is sent to switch S2 where the frame is received on VLAN 2. What causes this behavior?

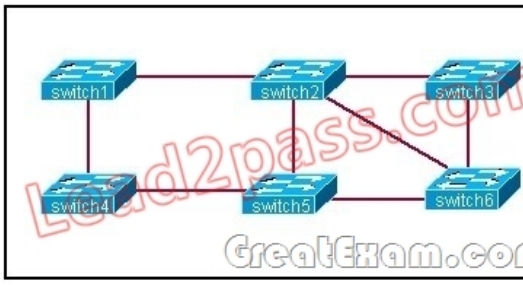


A. trunk mode mismatchesB. allowing only VLAN 2 on the destinationC. native VLAN mismatchesD. VLANs that do not correspond to a unique IP subnet Answer: CExplanation:Untagged frames are encapsulated with the native VLAN. In this case, the native VLANs are different so although S1 will tag it as VLAN 1 it will be received by S2. QUESTION 45At which layer of the OSI model is RSTP used to prevent loops? A. physicalB. data linkC. networkD. transport Answer: BExplanation:RSTP and STP operate on switches and are based on the exchange of Bridge Protocol Data Units (BPDUs) between switches. One of the most important fields in BPDUs is the Bridge Priority in which the MAC address is used to elect the Root Bridge -> RSTP operates at Layer 2 ?Data Link layer -> . QUESTION 46What does a Layer 2 switch use to decide where to forward a received frame? A. source MAC addressB. source IP addressC. source switch portD. destination IP addressE. destination port addressF. destination MAC address Answer: FExplanation:When a frame is received, the switch looks at the destination hardware address and finds the interface if it is in its MAC address table. If the address is unknown, the frame is broadcast on all interfaces except the one it was received on. QUESTION 47Refer to the exhibit. Which statement is true?

```
SwitchA# show spanning-tree vlan 20

VLAN0020
  Spanning tree enabled protocol rstp
  Root ID     Priority    24596
              Address     0017.596d.2a00
              Cost        38
              Port        11 (FastEthernet0/11)
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15
  Bridge ID   Priority    28692  (priority 28672 sys-id-ext 20)
              Address     0017.596d.1580
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15
              Aging Time 300
Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- ---------
Fa0/11           Root FWD 19        128.11   P2p
Fa0/12           Altn BLK 19        128.12   P2p
```

A. The Fa0/11 role confirms that SwitchA is the root bridge for VLAN 20.B. VLAN 20 is running the Per VLAN Spanning Tree Protocol.C. The MAC address of the root bridge is 0017.596d.1580.D. SwitchA is not the root bridge, because not all of the interface roles are designated. Answer: DExplanation:Only non-root bridge can have root port. Fa0/11 is the root port so we can confirm this switch is not the root bridge ->From the output we learn this switch is running Rapid STP, not PVST -> 0017.596d.1580 is the MAC address of this switch, not of the root bridge. The MAC address of the root bridge is 0017.596d.2a00 -> All of the interface roles of the root bridge are designated. SwitchA has one Root port and 1 Alternative port so it is not the root bridge. QUESTION 48Which two benefits are provided by creating VLANs? (Choose two.) A. added securityB. dedicated bandwidthC. provides segmentationD. allows switches to route traffic between subinterfaces E. contains collisions Answer: ACExplanation:A VLAN is a switched network that is logically segmented on an organizational basis, by functions, project teams, or applications rather than on a physical or geographical basis.Security:VLANs also improve security by isolating groups. High-security users can be grouped into a VLAN, possible on the same physical segment, and no users outside that VLAN can communicate with themLAN SegmentationVLANs allow logical network topologies to overlay the physical switched infrastructure such that any arbitrary collection of LAN ports can be combined into an autonomous user group or community of interest. The technology logically segments the network into separate Layer 2 broadcast domains whereby packets are switched between ports designated to be within the same VLAN. By containing traffic originating on a particular LAN only to other LANs in the same VLAN, switched virtual networks avoid wasting bandwidth. QUESTION 49Which command can be used from a PC to verify the connectivity between hosts that connect through a switch in the same LAN? A. pingaddressB. tracertaddressC. tracerouteaddressD. arpaddress Answer: AExplanation:ICMP pings are used to verify connectivity between two IP hosts. Traceroute is used to verify the router hop path traffic will take but in this case since the hosts are in the same LAN there will be no router hops involved. QUESTION 50Based on the network shown in the graphic. Which option contains both the potential networking problem and the protocol or setting that should be used to prevent the problem?



A. routing loops, hold down timersB. switching loops, split horizonC. routing loops, split horizonD. switching loops, VTP E. routing loops, STPF. switching loops, STP Answer: FExplanation:The Spanning-Tree Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. Spanning-Tree Protocol implements the 802.1D IEEE algorithm by exchanging BPDU messages with other switches to detect loops, and then removes the loop by shutting down selected bridge interfaces. This algorithm guarantees that there is one and only one active path between two network devices. If you want to pass the Cisco CCNA 200-120 exam sucessfully, recommend to read latest Cisco 200-120 dumps full version.