Name – Utsav k. Chowdhary
Redg – 2141003017
Sl. No – 09
Section – E

WEEK-END ASSIGNMENT-07
Computer Networking Workshop (CSE 4541)

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Course Outcome: CO$_3$

Program Outcome: PO$_{2-3}$

Submission on: 09-04-2024
Learning Level: L$_{3-4}$

Experiment with L2 switching, configuration and verification of switch interfaces

1. Refer to the exhibit. PC1 is trying to ping PC3 for the first time and sends out an ARP to S1 Which action is taken by S1?

Topology
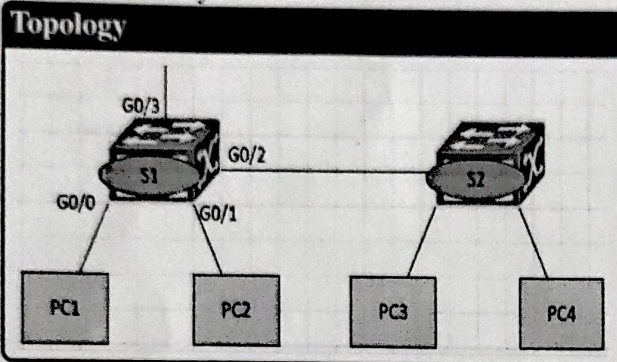
Choose the answer

○ It forwards it out G0/3 only

☑ It is flooded out every port except G0/0

○ It drops the frame

○ It forwards it out interface G0/2 only

2. What is the default behavior of a Layer 2 switch when a frame with an unknown destination MAC address is received?

Select the option

○ The Layer 2 switch drops the received frame

☑ The Layer 2 switch floods packets to all ports except the receiving port in the given VLAN

○ The Layer 2 switch sends a copy of a packet to CPU for destination MAC address learning

○ The Layer 2 switch forwards the packet and adds the destination MAC address to its MAC address table

Brief explanation

If the destination MAC address is not in the CAM table the switch sends the frame out all other ports that are in the same Vlan as the received frame. This is called flooding. It doesn't flood the frame out the same port on which the frame was received.

3. A Cisco Catalyst switch has 24 10/100 ports, numbered 0/1 through 0/24. Ten PCs connect to the 10 lowest numbered ports, with those PCs working and sending data over the network. The other ports are not connected to any device. Which of the following answers lists facts displayed by the show interfaces status command?
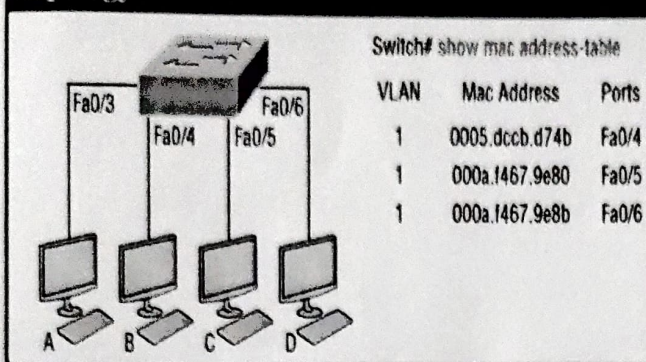
Select the option

○ Port Ethernet 0/1 is in a connected state

○ Port Fast Ethernet 0/11 is in a connected state

☑ Port Fast Ethernet 0/5 is in a connected state

☑ Port Ethernet 0/15 is in a notconnected state

Brief explanation

Fast Ethernet 0/1 through 0/10 would be listed in connected state, while the rest would be listed in a not connected state.

4. In the diagram shown, what will the switch do if a frame with a destination MAC address of `000a.f467.63b1` is received on **Fa0/4**? (Choose all that apply.)

Topology

Switch# show mac address-table

VLAN	Mac Address	Ports
1	0005.dccb.d74b	Fa0/4
1	000a.f467.9e80	Fa0/5
1	000a.f467.9e8b	Fa0/6

Answer

○ Drop the frame

○ Send the frame out of Fa0/3

○ Send the frame out of Fa0/4

Ø Send the frame out of Fa0/5

Ø Send the frame out of Fa0/6

5. Which of the following statements is **not true** with regard to layer 2 switching?

Select the option

Ø Layer 2 switches and bridges are faster than routers because they dont take up time looking at the Data Link layer header information.

○ Layer 2 switches and bridges look at the frames hardware addresses before deciding to either forward, flood, or drop the frame.

○ Switches create private, dedicated collision domains and provide in-dependent bandwidth on each port.

○ Switches use application-specific integrated circuits (ASICs) to build and maintain their MAC filter tables.

Brief explanation

Because L2 switches do look at DLL header information which includes MAC address

6. What issue that arises when redundancy exists between switches is shown in the figure?

Topology

Switch A   Switch B

Segment 1

Segment 2
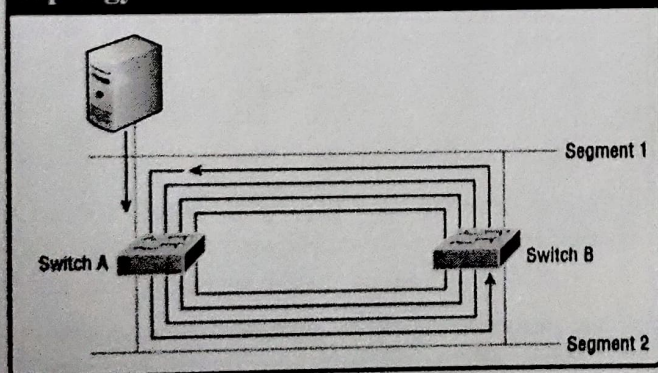
Answer

Ø Broadcast storm

○ Routing loop

○ Port violation

○ Loss of gateway

7. On which default interface have you configured an IP address for a switch?

○ int fa0/0

○ int vty 0 15

Ø int vlan 1

○ int s/0/0

8. [6] number of column header will be displayed for **SW1#show interfaces status.**

9. If you want to manage your switches from outside your LAN, you must set a **default gateway** on the switches just as you would with a host. Select the mode on the switch the command **ip default-gateway** will be added.

Select the option	Write the sequence of command
○ user mode	Switch> en
○ enable mode	Switch# config t
✓ global configuration mode	Switch (config)# ip default-gateway 192.168.1.1
○ line configuration mode	

10. Redundant links between switches are important to have in place because they help prevent nasty network failures in the event that one link stops working. But while its true, the redundant links on the other hand can cause **loops** over the network. Select the protocol used for loop avoidance.
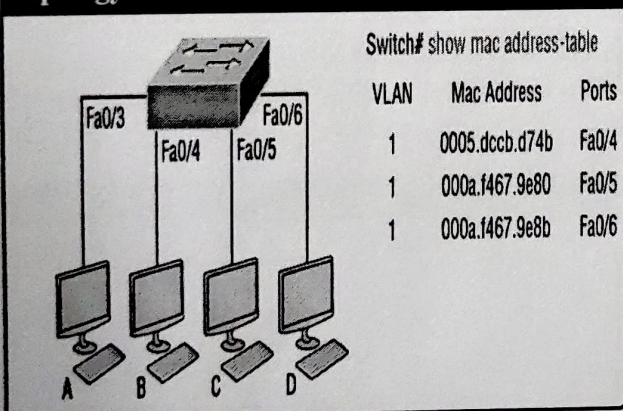
Select the option		Full Name of each
✓ STP	○ CDP	
○ HDLC	○ PPP	

11. Consider the given topology. Host A sends a data frame to Host D. What do you think the switch will do when it receives the frame from Host A?

Topology

Switch# show mac address-table

VLAN	Mac Address	Ports
1	0005.dccb.d74b	Fa0/4
1	000a.f467.9e80	Fa0/5
1	000a.f467.9e8b	Fa0/6

Fa0/3, Fa0/4, Fa0/5, Fa0/6

A B C D

Select option

✓ Switch will forward the frame to all other

○ Switch will drop the frame as destination MAC is not there in MAC table

○ Since Host A's MAC address is not in the forward/filter table, The switch will add the source address and port to the MAC address table, then forward the frame to Host D.

○ None of these

12. Consider the switched network given in the left side. Assume that a frame arrived at the interface fa0/0. The switch floods to all interface except the input and a device respond at the interface fa0/3. Find the number of entries at the mac table.
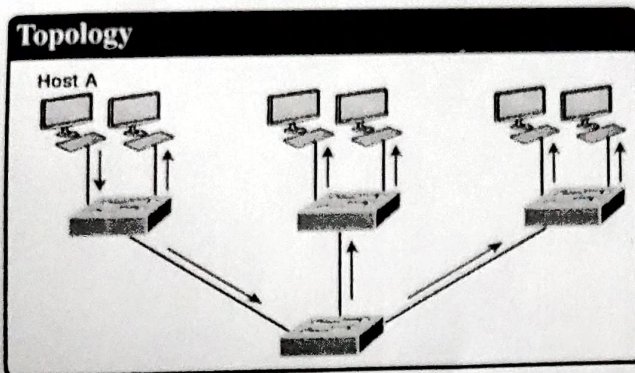
Topology

Fa0/0, Fa0/1, Fa0/2, Fa0/3

MAC forward/filter table
Fa0/0:
Fa0/1:
Fa0/2:
Fa0/3:

Answer

✓ 2

○ 3

○ 4

○ 0

WEA7-3
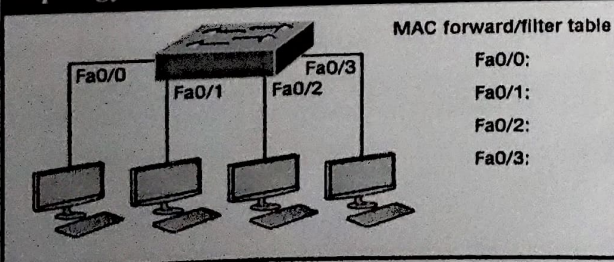
13. Consider the switched network given in the left side.

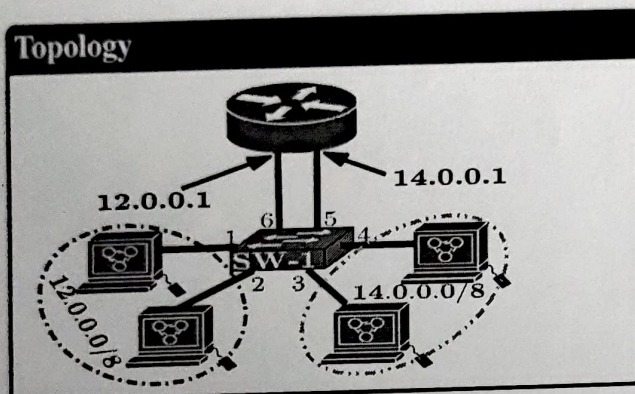| Topology	Select the option
Host A	With this configuration, every broadcast packet transmitted is seen by every device on the network regardless of whether the device needs to receive that data or not. ✓ ⊘ TRUE ○ FALSE

14. Consider the network given in the left side.

Topology	Select the option
14.0.0.1 12.0.0.1 6 5 1 4 SW-1 2 3 14.0.0.0/8 12.0.0.0/8	Could both the networks able to communicate? ✓ ⊘ Yes ○ NO ○ May be or May not be ○ None of these

15. Consider the network given in Question-14. Say an ARP broadcast frame is generated from one of the host in network 12.0.0.0/8 and arrived at **port-1** of the switch. Now select the port(s) through which the frame will be forward by the switch.

Select	Suggestion
○ 2, 3 ✓ ⊘ 2, 3, 4, 5, 6 ○ 2, 3, 4, 5 ○ 2, 3, 4, 6 ○ 4, 5 ○ 2, 3, 4	Is it possible to control the broadcast domain so that all devices within a LAN are members of the some broadcast domain and receive all broadcasts relevant to it. ✓ ⊘ Yes ○ NO If Yes, Mechanism name. [＿＿＿]

16. Switch ports are layer 2 only interfaces that are associated with a physical port that can belong to only one VLAN if it's an access port or all VLANs if it's a trunk port.

State whether the statement is TRUE or FALSE	
✓ ⊘ TRUE	○ BOTH
○ FALSE	○ NONE