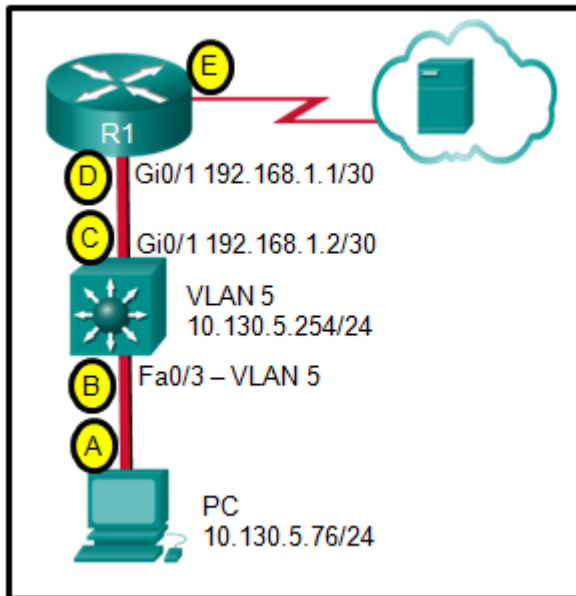# CCNA 2 Chapter 5 v5.0 Exam Answers 2015 (100%)

1. Refer to the exhibit. The switch does the routing for the hosts that connect to VLAN 5. If the PC accesses a web server from the Internet, at what point will a VLAN number be added to the frame?

CCNA Chapter 5 Exam Answer 001 (v5.02, 2015)

- point A
- point B
- point C
- point D
- point E
- No VLAN number is added to the frame in this design.

2. Which type of inter-VLAN communication design requires the configuration of multiple subinterfaces?

- router on a stick
- routing via a multilayer switch
- routing for the management VLAN
- legacy inter-VLAN routing

3. What is a disadvantage of using router-on-a-stick inter-VLAN routing?

- does not support VLAN-tagged packets
- requires the use of more physical interfaces than legacy inter-VLAN routing
- does not scale well beyond 50 VLANs
- requires the use of multiple router interfaces configured to operate as access links

4. How is traffic routed between multiple VLANs on a multilayer switch?

- Traffic is routed via physical interfaces.
- Traffic is routed via internal VLAN interfaces.
- Traffic is broadcast out all physical interfaces.
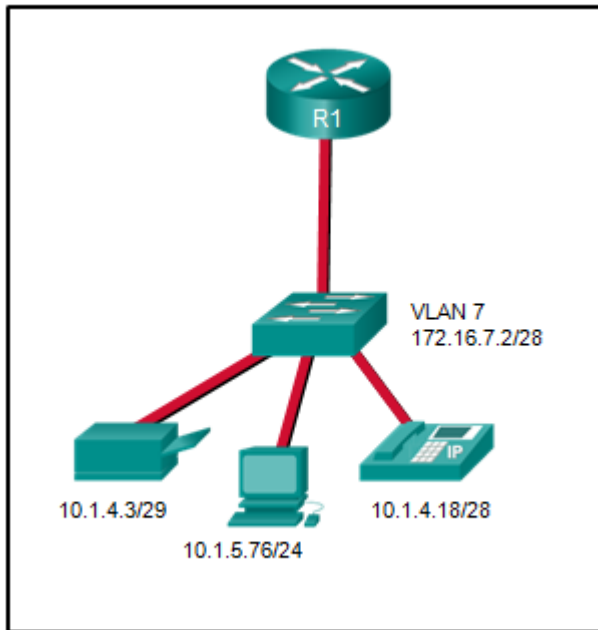- Traffic is routed via subinterfaces.

5. A small college uses VLAN 10 for the classroom network and VLAN 20 for the office network. What is needed to enable communication between these two VLANs while using legacy inter-VLAN routing?

- A router with at least two LAN interfaces should be used.
- Two groups of switches are needed, each with ports that are configured for one VLAN.
- A router with one VLAN interface is needed to connect to the SVI on a switch.
- A switch with a port that is configured as trunk is needed to connect to a router.

6. Which statement describes a disadvantage of using router subinterfaces for inter-VLAN routing?

- It is more expensive than using individual router interfaces.
- Routed traffic must contend for bandwidth on a single router interface.
- Trunking cannot be used to connect the router to the switch.
- All untagged traffic is dropped.

7. Refer to the exhibit. A network administrator needs to configure router-on-a-stick for the networks that are shown. How many subinterfaces will have to be created on the router if each VLAN that is shown is to be routed and each VLAN has its own subinterface?

CCNA Chapter 5 Exam Answer 002 (v5.02, 2015)

- 1
- 2
- 3
- 4
- 5

8. Refer to the exhibit. A network administrator has configured router CiscoVille with the above commands to provide inter-VLAN routing. What command will be required on a switch that is connected to the Gi0/0 interface on router CiscoVille to allow inter-VLAN routing??

```
CiscoVille# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
CiscoVille(config)# interface gigabitethernet 0/0
CiscoVille(config-if)# no ip address
CiscoVille(config-if)# interface gigabitethernet 0/0.10
CiscoVille(config-subif)# encapsulation dot1Q 10
CiscoVille(config-subif)# ip address 192.168.10.254 255.255.255.0
CiscoVille(config-subif)# interface gigabitethernet 0/0.20
CiscoVille(config-subif)# encapsulation dot1Q 20
CiscoVille(config-subif)# ip address 192.168.20.254 255.255.255.0
CiscoVille(config-subif)# exit
CiscoVille(config)# interface gigabitethernet 0/0
CiscoVille(config-if)# no shutdown
```

CCNA Chapter 5 Exam Answer 003 (v5.02, 2015)

- switchport mode access
- no switchport

- switchport mode trunk
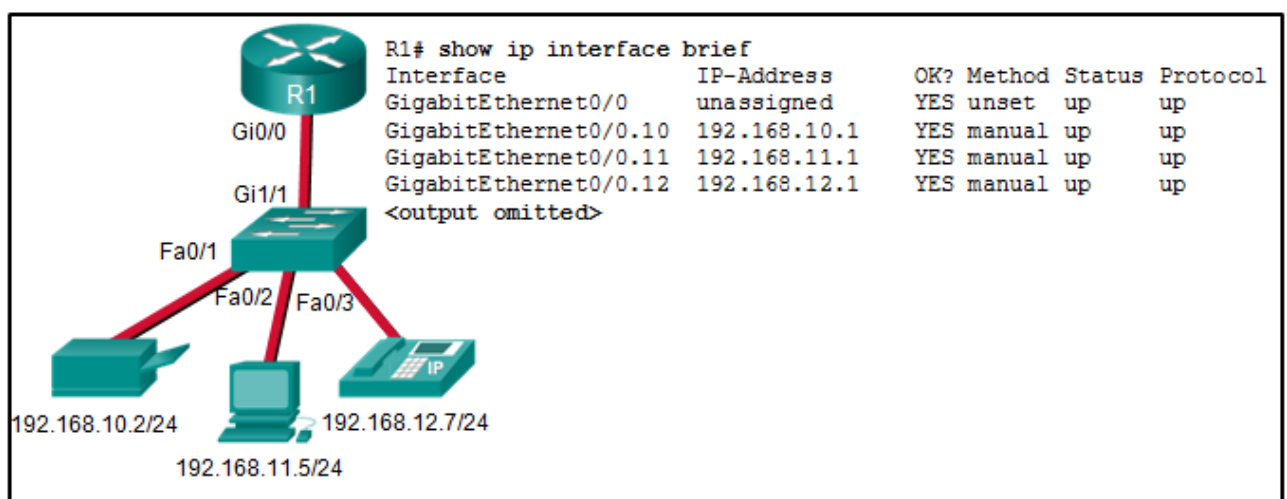- switchport mode dynamic desirable

9. Refer to the exhibit. Router RA receives a packet with a source address of 192.168.1.35 and a destination address of 192.168.1.85. What will the router do with this packet?

```
RA(config)# interface fastethernet 0/1
RA(config-if)# no shutdown
RA(config-if)# interface fastethernet 0/1.1
RA(config-subif)# encapsulation dot1q 1
RA(config-subif)# ip address 192.168.1.62 255.255.255.224
RA(config-subif)# interface fastethernet 0/1.2
RA(config-subif)# encapsulation dot1q 2
RA(config-subif)# ip address 192.168.1.94 255.255.255.224
RA(config-subif)# interface fastethernet 0/1.3
RA(config-subif)# encapsulation dot1q 3
RA(config-subif)# ip address 192.168.1.126 255.255.255.224
RA(config-subif)# end
```

CCNA Chapter 5 Exam Answer 004 (v5.02, 2015)

- The router will drop the packet.
- The router will forward the packet out interface FastEthernet 0/1.1.
- The router will forward the packet out interface FastEthernet 0/1.2.
- The router will forward the packet out interface FastEthernet 0/1.3.
- The router will forward the packet out interface FastEthernet 0/1.2 and interface FastEthernet 0/1.3.

10. Refer to the exhibit. Communication between the VLANs is not occurring. What could be the issue?


```
R1# show ip interface brief
Interface              IP-Address      OK? Method Status Protocol
GigabitEthernet0/0     unassigned      YES unset  up     up
GigabitEthernet0/0.10  192.168.10.1    YES manual up     up
GigabitEthernet0/0.11  192.168.11.1    YES manual up     up
GigabitEthernet0/0.12  192.168.12.1    YES manual up     up
<output omitted>
```

Gi0/0
Gi1/1
Fa0/1
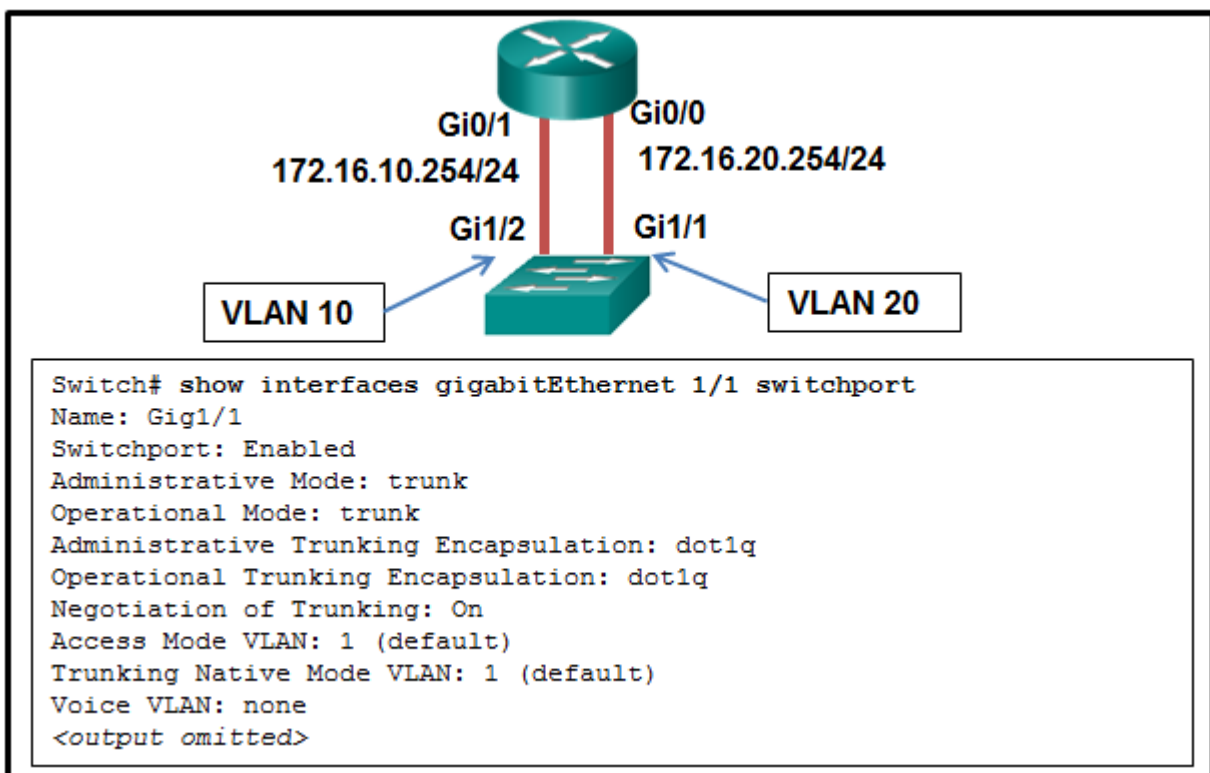Fa0/2 Fa0/3
192.168.10.2/24
192.168.12.7/24
192.168.11.5/24

CCNA Chapter 5 Exam Answer 005 (v5.02, 2015)

- The wrong port on the router has been used.
- The Gi1/1 switch port is not in trunking mode.
- A duplex issue exists between the switch and the router.
- Default gateways have not been configured for each VLAN.

11. Inter-VLAN communication is not occurring in a particular building of a school. Which two commands could the network administrator use to verify that inter-VLAN communication was working properly between a router and a Layer 2 switch when the router-on-a-stick design method is implemented? (Choose two.)

- From the router, issue the show ip route command.
- From the router, issue the show interfaces trunk command.
- From the router, issue the show interfaces interface command.
- From the switch, issue the show vlans command.
- From the switch, issue the show interfaces trunk command.
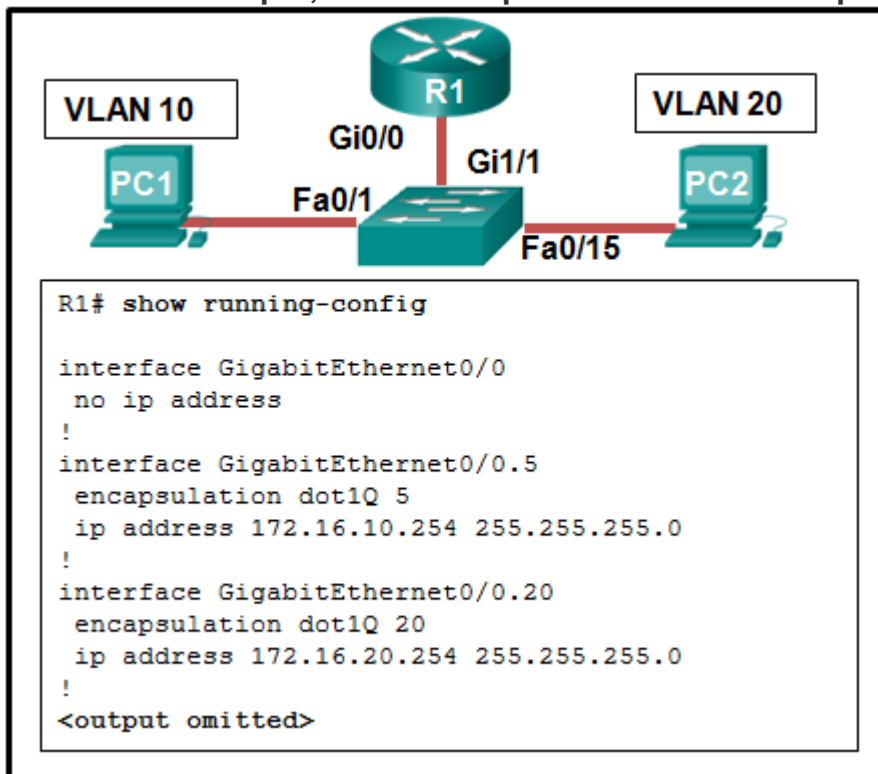- From the switch, issue the show interfaces interface command.

12. Refer to the exhibit. A network administrator is verifying the configuration of inter-VLAN routing. Users complain that PCs on different VLANs cannot communicate. Based on the output, what are two configuration errors on switch interface Gi1/1? (Choose two.)


```
Switch# show interfaces gigabitEthernet 1/1 switchport
Name: Gig1/1
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
<output omitted>
```

CCNA Chapter 5 Exam Answer 006 (v5.02, 2015)

- Gi1/1 is in the default VLAN.
- Voice VLAN is not assigned to Gi1/1.
- Gi1/1 is configured as trunk mode.
- Negotiation of trunking is turned on on Gi1/1.
- The trunking encapsulation protocol is configured wrong.

13. Refer to the exhibit. A network administrator is verifying the configuration of inter-VLAN routing. Users complain that PC2 cannot communicate with PC1. Based on the output, what is the possible cause of the problem?

```
R1# show running-config

interface GigabitEthernet0/0
 no ip address
!
interface GigabitEthernet0/0.5
 encapsulation dot1Q 5
 ip address 172.16.10.254 255.255.255.0
!
interface GigabitEthernet0/0.20
 encapsulation dot1Q 20
 ip address 172.16.20.254 255.255.255.0
!
<output omitted>
```

CCNA Chapter 5 Exam Answer 007 (v5.02, 2015)

- Gi0/0 is not configured as a trunk port.
- The command interface GigabitEthernet0/0.5 was entered incorrectly.
- There is no IP address configured on the interface Gi0/0.
- The no shutdown command is not entered on subinterfaces.
- The encapsulation dot1Q 5 command contains the wrong VLAN.

14. Refer to the exhibit. After attempting to enter the configuration that is shown in router RTA, an administrator receives an error and users on VLAN 20 report that they are unable to reach users on VLAN 30. What is causing the problem?

```
RTA# configure terminal
RTA(config)# interface Fa0/0
RTA(config-if)# no shutdown
RTA(config-if)# interface Fa0/0.10
RTA(config-subif)# encapsulation dot1q  10
RTA(config-subif)# ip address 192.168.3.30 255.255.255.224
RTA(config-subif)# interface Fa0/0.20
RTA(config-subif)# encapsulation dot1q  20
RTA(config-subif)# ip address 192.168.3.49 255.255.255.224
RTA(config-subif)# interface Fa0/0.30
RTA(config-subif)# encapsulation dot1q  30
RTA(config-subif)# ip address 192.168.3.62 255.255.255.224
```

CCNA Chapter 5 Exam Answer 008 (v5.02, 2015)

- Dot1q does not support subinterfaces.
- There is no address on Fa0/0 to use as a default gateway.
- RTA is using the same subnet for VLAN 20 and VLAN 30.
- The no shutdown command should have been issued on
- Fa0/0.20 and Fa0/0.30.

15. Refer to the exhibit. A router-on-a-stick configuration was implemented for VLANs 15, 30, and 45, according to the show running-config command output. PCs on VLAN 45 that are using the 172.16.45.0 /24 network are having trouble connecting to PCs on VLAN 30 in the 172.16.30.0 /24 network. Which error is most likely causing this problem??
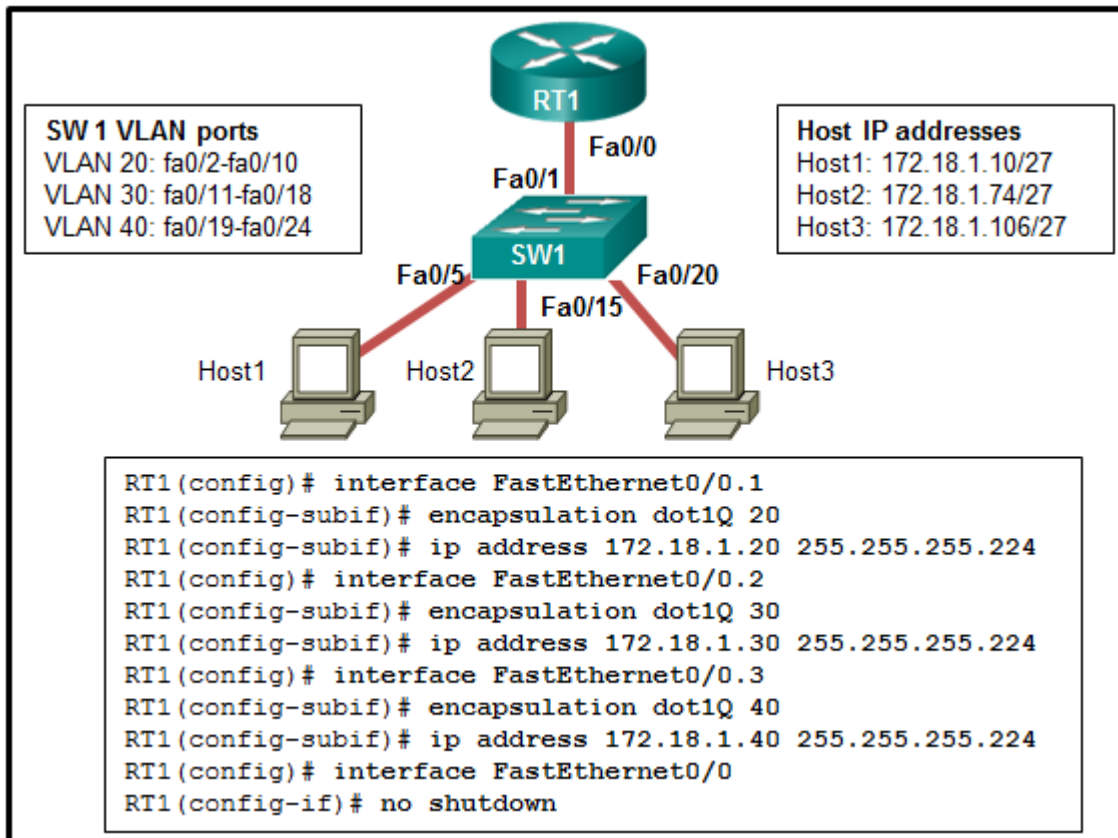
```
<output omitted>
!
interface GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
!
interface GigabitEthernet0/0.15
 encapsulation dot1Q 15
 ip address 172.16.15.254 255.255.255.0
!
interface GigabitEthernet0/0.30
 encapsulation dot1Q 30
 ip address 172.16.3.254 255.255.255.0
!
interface GigabitEthernet0/0.45
 encapsulation dot1Q 45
 ip address 172.16.45.254 255.255.255.0
!
<output omitted>
```

CCNA Chapter 5 Exam Answer 009 (v5.02, 2015)

- The wrong VLAN has been configured on GigabitEthernet 0/0.45.

- The command no shutdown is missing on GigabitEthernet 0/0.30.
- The GigabitEthernet 0/0 interface is missing an IP address.
- There is an incorrect IP address configured on GigabitEthernet 0/0.30.

16. Refer to the exhibit. A network administrator is configuring RT1 for inter-VLAN routing. The switch is configured correctly and is functional. Host1, Host2, and Host3 cannot communicate with each other. Based on the router configuration, what is causing the problem?

```
SW 1 VLAN ports
VLAN 20: fa0/2-fa0/10
VLAN 30: fa0/11-fa0/18
VLAN 40: fa0/19-fa0/24
```

```
Host IP addresses
Host1: 172.18.1.10/27
Host2: 172.18.1.74/27
Host3: 172.18.1.106/27
```

```
RT1(config)# interface FastEthernet0/0.1
RT1(config-subif)# encapsulation dot1Q 20
RT1(config-subif)# ip address 172.18.1.20 255.255.255.224
RT1(config)# interface FastEthernet0/0.2
RT1(config-subif)# encapsulation dot1Q 30
RT1(config-subif)# ip address 172.18.1.30 255.255.255.224
RT1(config)# interface FastEthernet0/0.3
RT1(config-subif)# encapsulation dot1Q 40
RT1(config-subif)# ip address 172.18.1.40 255.255.255.224
RT1(config)# interface FastEthernet0/0
RT1(config-if)# no shutdown
```

CCNA Chapter 5 Exam Answer 010 (v5.02, 2015)

- Interface Fa0/0 is missing IP address configuration information.
- IP addresses on the subinterfaces are incorrectly matched to the VLANs.
- Each subinterface of Fa0/0 needs separate no shutdown commands.
- Routers do not support 802.1Q encapsulation on subinterfaces.

17. What condition is required to enable Layer 3 switching?

- The Layer 3 switch must have IP routing enabled.
- All participating switches must have unique VLAN numbers.
- All routed subnets must be on the same VLAN.
- Inter-VLAN portions of Layer 3 switching must use router-on-a-stick.

18. Refer to the exhibit. Which command can the administrator issue to change the VLAN10 status to up??

```
Switch1# show running-config
<output omitted>
interface FastEthernet0/1
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface Vlan10
 ip address 192.168.10.1 255.255.255.0
!
interface Vlan20
 ip address 192.168.20.1 255.255.255.0

Switch1# show ip interface brief
Interface            IP-Address      OK? Method Status
Protocol

FastEthernet0/1      unassigned      YES unset  up                up

<output omitted>

Vlan10               192.168.10.1    YES manual down              down

Vlan20               192.168.20.1    YES manual up                up
```

CCNA Chapter 5 Exam Answer 011 (v5.02, 2015)

- Switch1(config)# interface vlan 10
  Switch1(config-if)# no shutdown?
- Switch1(config)# interface vlan 10
  Switch1(config-if)# ip address 192.168.10.1 255.255.255.0?
- Switch1(config)# interface vlan 10
  Switch1(config-if)# ip address 192.168.10.1 255.255.255.0
  Switch1(config-if)# no shutdown?
- Switch1(config)# vlan 10
  Switch1(config-vlan)# exit

19. While configuring inter-VLAN routing on a multilayer switch, a network administrator issues the no switchport command on an interface that is connected to another switch. What is the purpose of this command?

- to create a routed port for a single network
- to provide a static trunk link
- to create a switched virtual interface
- to provide an access link that tags VLAN traffic

20. What is a disadvantage of using multilayer switches for inter-VLAN routing?

- Multilayer switches have higher latency for Layer 3 routing.
- Multilayer switches are more expensive than router-on-a-stick implementations.

- Spanning tree must be disabled in order to implement routing on a multilayer switch.
- Multilayer switches are limited to using trunk links for Layer 3 routing.

21. Fill in the blank with an acronym.

While configuring inter-VLAN routing on a multilayer switch, a/an svi is used as a virtual-routed VLAN interface.

22. Fill in the blank. Do not use abbreviations.

A network engineer is troubleshooting the configuration of new VLANs on a network. ?Which command is used to display the list of VLANs that exists on the switch?
show vlan

23. Open the PT Activity. Perform the tasks in the activity instructions and then answer the question.

Fill in the blank. Do not use abbreviations.
Which command is missing on the Layer 3 switch to restore the full connectivity between PC1 and the web server?
ip address 192.168.20.1 255.255.255.0