

PAPUR ARHOLIAD / EXAMINATION PAPER

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LEFEL / LEVEL:	6

MODIWL / MODULE: ACCA6022
Switching, Routing and Wireless Essentials

AMSER / TIME:	1 HOUR
CYFARWYDDIADAU / INSTRUCTIONS:	ANSWER <u>ALL</u> QUESTIONS THIS PAPER CONTRIBUTES 75 % TO OVERALL MODULE ASSESSMENT

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Contribution to Overall Module Assessment (%):			

ANSWER ALL QUESTIONS

FROM MOODLE LINK EXAM (NB: The exam will be conducted on Moodle VLE, and following are sample questions which will be extracted from database)

1. Which two statements are correct with respect to SVI inter-VLAN routing? (Choose two.)

- A. SVIs can be bundled into EtherChannels.
- B. Switching packets is faster with SVI.
- C. There is no need for a connection to a router.
- D. SVIs eliminate the need for a default gateway in the hosts.
- E. Virtual interfaces support subinterfaces.

Answer B, C

2. A network administrator issues the show vlan brief command while troubleshooting a user support ticket. What output will be displayed?

- A. the VLAN assignment and membership for all switch ports
- B. the VLAN assignment and trunking encapsulation
- C. the VLAN assignment and native VLAN
- D. the VLAN assignment and membership for device MAC addresses

ANSWER: A

3. Which type of VLAN is used to designate which traffic is untagged when crossing a trunk port?

- A. native
- B. data
- C. default

D. management

ANSWER: A

4. Which solution would help a college alleviate network congestion due to collisions?

A. a firewall that connects to two Internet providers

B. a high port density switch

C. a router with three Ethernet ports

D. a router with two Ethernet ports

ANSWER: B

5. What is a characteristic of an IPv4 loopback interface on a Cisco IOS router?

A. Only one loopback interface can be enabled on a router.

B. It is a logical interface internal to the router.

C. It is assigned to a physical port and can be connected to other devices.

D. The no shutdown command is required to place this interface in an UP state.

ANSWER: B

6. Which impact does adding a Layer 2 switch have on a network?

A. an increase in the number of network collisions

B. an increase in the number of dropped frames

C. an increase in the size of the broadcast domain

D. an increase in the size of the collision domain

ANSWER: C

7. Which characteristic describes cut-through switching?

- A. Only outgoing frames are checked for errors.
- B. Frames are forwarded without any error checking.
- C. Buffering is used to support different Ethernet speeds.
- D. Error-free fragments are forwarded, so switching occurs with lower latency.

ANSWER: B

8. What is the significant difference between a hub and a Layer 2 LAN switch?

- A. Each port of a hub is a collision domain, and each port of a switch is a broadcast domain.
- B. A hub divides collision domains, and a switch divides broadcast domains.
- C. A hub forwards frames, and a switch forwards only packets.
- D. A hub extends a collision domain, and a switch divides collision domains.

ANSWER: D

9. What information is added to the switch table from incoming frames?

- A. source IP address and incoming port number
- B. destination IP address and incoming port number
- C. source MAC address and incoming port number
- D. destination MAC address and incoming port number

ANSWER: C

10. Which statement is correct about Ethernet switch frame forwarding decisions?

- A. Cut-through frame forwarding ensures that invalid frames are always dropped.
- B. Only frames with a broadcast destination address are forwarded out all active switch ports.
- C. Unicast frames are always forwarded regardless of the destination MAC address.
- D. Frame forwarding decisions are based on MAC address and port mappings in the CAM table.

ANSWER: D

11. How do switch buffers affect network performance?

- A. They provide error checking on the data received.
- B. They hold data temporarily when a collision occurs until normal data transmission resumes.
- C. They provide extra memory for a particular port if autonegotiation of speed or duplex fails.
- D. They store frames received, thus preventing premature frame discarding when network congestion occurs.

ANSWER: D

12. A network contains multiple VLANs spanning multiple switches. What happens when a device in VLAN 20 sends a broadcast Ethernet frame?

- A. Devices in VLAN 20 and the management VLAN see the frame.
- B. Only devices that are connected to the local switch see the frame.
- C. All devices in all VLANs see the frame.

D. Only devices in VLAN 20 see the frame.

ANSWER: D

13. A high school uses VLAN15 for the laboratory network and VLAN30 for the faculty network. What is required to enable communication between these two VLANs while using the router-on-a-stick approach?

- A. Two groups of switches are needed, each with ports that are configured for one VLAN.
- B. A router with at least two LAN interfaces is needed.
- C. A switch with a port that is configured as a trunk is needed when connecting to the router.
- D. A multilayer switch is needed.

ANSWER: C

14. What type of VLAN should not carry voice and network management traffic?

- A. trunk VLAN
- B. voice VLAN
- C. security VLAN
- D. data VLAN

ANSWER: D

15. A technician is configuring a new Cisco 2960 switch. What is the effect of issuing the BranchSw> enable command?

- A. It enters the global configuration mode.

- B. It updates the MAC address table for the associated port.
- C. It enters configuration mode for a switch virtual interface.
- D. It enters privileged mode.

ANSWER: D

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

- A. lowest MAC address
- B. lowest IP address
- C. highest IP address
- D. highest MAC address

ANSWER: A

17. What is a characteristic of spanning tree?

- A. It prevents propagation of Layer 2 broadcast frames.
- B. It is enabled by default on Cisco switches.
- C. It is used to discover information about an adjacent Cisco device.
- D. It has a TTL mechanism that works at Layer 2.

ANSWER: B

18. What is the purpose of the Spanning Tree Protocol (STP)?

- A. creates smaller broadcast domains
- B. creates smaller collision domains

- C. prevents routing loops on a router
- D. prevents Layer 2 loops

ANSWER: D

19. What is the outcome of a Layer 2 broadcast storm?

- A. New traffic is discarded by the switch because it is unable to be processed.
- B. CSMA/CD will cause each host to continue transmitting frames.
- C. ARP broadcast requests are returned to the transmitting host.
- D. Routers will take over the forwarding of frames as switches become congested.

ANSWER: A

20. In which two PVST+ port states are MAC addresses learned? (Choose two.)

- A. listening
- B. forwarding
- C. disabled
- D. blocking
- E. learning

ANSWER: B, E

21. Which two network design features require Spanning Tree Protocol (STP) to ensure correct network operation? (Choose two.)

- A. link-state dynamic routing that provides redundant routes

- B. implementing VLANs to contain broadcasts
- C. redundant links between Layer 2 switches
- D. static default routes
- E. removing single points of failure with multiple Layer 2 switches

ANSWER: C, E

22. A set of switches is being connected in a LAN topology. Which STP bridge priority value will make it least likely for the switch to be selected as the root?

- A. 65535
- B. 4096
- C. 32768
- D. 61440

ANSWER: D

23. What are two drawbacks to turning spanning tree off and having multiple paths through the Layer 2 switch network? (Choose two.)

- A. The switch acts like a hub.
- B. Broadcast frames are transmitted indefinitely.
- C. Port security shuts down all of the ports that have attached devices.
- D. The MAC address table becomes unstable.
- E. Port security becomes unstable.

ANSWER: B,D

24. Which port role is assigned to the switch port that has the lowest cost to reach the root bridge?

- A. disabled port
- B. root port
- C. designated port
- D. non-designated port

ANSWER: B

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

- A. learning
- B. disabled
- C. forwarding
- D. blocking
- E. listening

ANSWER: A,C

26. When the show spanning-tree vlan 33 command is issued on a switch, three ports are shown in the forwarding state. In which two port roles could these interfaces function while in the forwarding state? (Choose two.)

- A. blocked
- B. disabled
- C. alternate
- D. root
- E. designated

ANSWER: D,E

27. A small company network has six interconnected Layer 2 switches. Currently all switches are using the default bridge priority value. Which value can be used to

configure the bridge priority of one of the switches to ensure that it becomes the root bridge in this design?

- A. 61440
- B. 1
- C. 32768
- D. 28672

ANSWER: D

28. Which technology is an open protocol standard that allows switches to automatically bundle physical ports into a single logical link?

- A. LACP
- B. PAgP
- C. DTP
- D. Multilink PPP

ANSWER:A

29. Which statement is true regarding the use of PAgP to create EtherChannels?

- A. It mandates that an even number of ports (2, 4, 6, etc.) be used for aggregation.
- B. It requires more physical links than LACP does.
- C. It is Cisco proprietary.
- D. It requires full duplex.

ANSWER: C

30. A network administrator has configured an EtherChannel between two switches that are connected via four trunk links. If the physical interface for one of the trunk links changes to a down state, what happens to the EtherChannel?

- A. Spanning Tree Protocol will recalculate the remaining trunk links.
- B. The EtherChannel will remain functional.

C. Spanning Tree Protocol will transition the failed physical interface into forwarding mode.

D. The EtherChannel will transition to a down state.

ANSWER: B

31. What is a requirement to configure a trunking EtherChannel between two switches?

A. The participating interfaces must be on the same module on a switch.

B. The participating interfaces must be assigned the same VLAN number on both switches.

C. The participating interfaces must be physically contiguous on a switch.

D. The allowed range of VLANs must be the same on both switches.

ANSWER: D

32. Which two parameters must match on the ports of two switches to create a PAgP EtherChannel between the switches? (Choose two.)

A. MAC address

B. Speed

C. VLAN information

D. PAgP mode

E. Port ID

ANSWER: B, C

33. A switch is configured to run STP. What term describes the switch port closest, in terms of overall cost, to the root bridge?

A. disabled

B. alternate port

C. designated port

D. root port

ANSWER: D

34. Which statement describes HSRP?

A. It is an open standard protocol.

B. It uses ICMP to allow IPv4 hosts to locate routers that provide IPv4 connectivity to remote IP networks.

C. If the virtual router master fails, one router is elected as the virtual router master with the other routers acting as backups.

D. It is used within a group of routers for selecting an active device and a standby device to provide gateway services to a LAN.

ANSWER: D

35. Which protocol automates assignment of IP addresses on a network, and which port number does it use? (Choose two.)

A. DNS

B. 80

C. DHCP

D. 53

E. 67

ANSWER: C,E

36. Which message does an IPv4 host use to reply when it receives a DHCPOFFER message from a DHCP server?

A. DHCPREQUEST

B. DHCPDISCOVER

C. DHCPOFFER

D. DHCPACK

ANSWER: A

37. A client device on an Ethernet segment needs an IP address in order to communicate on the network. A DHCP server with IP address 192.168.1.1 has been configured and enabled on the network. How will a client device obtain a usable IP address for this network?

- A. Use a statically configured IP address from the pool of IP addresses that is offered by the DHCP server.
- B. Send a DHCPDISCOVER message to physical address FF-FF-FF-FF-FF-FF.
- C. Send a DHCPREQUEST packet to IP address 255.255.255.255.
- D. Send a DHCPACK packet to the default gateway address.

ANSWER: B

38. A host PC is attempting to lease an address through DHCP. What message is sent by the server to let the client know it is able to use the provided IP information?

- A. DHCPACK
- B. DHCPOFFER
- C. DHCPREQUEST
- D. DHCPDISCOVER

ANSWER: A

39. Which command, when issued in the interface configuration mode of a router, enables the interface to acquire an IPv4 address automatically from an ISP, when that link to the ISP is enabled?

- A. ip address dhcp

B. ip helper-address

C. ip dhcp pool

D. service dhcp

ANSWER: A

40. A company uses DHCP to manage IP address deployment for employee workstations. The IT department deploys multiple DHCP servers in the data center and uses DHCP relay agents to facilitate the DHCP requests from workstations. Which two UDP ports are used to forward DHCP traffic? (Choose two.)

A. 23

B. 80

C. 68

D. 53

E. 67

ANSWER: C,E

41. What information can be verified through the show ip dhcp binding command?

A. the number of IP addresses remaining in the DHCP pool

B. the IPv4 addresses that are assigned to hosts by the DHCP server

C. the IPv4 addresses that have been excluded from the DHCPv4 pool

D. that DHCPv4 discover messages are still being received by the DHCP server

ANSWER: B

42. What is the purpose of ARP in an IPv4 network?

- A. to build the MAC address table in a switch from the information that is gathered
- B. to forward data onward based on the destination IP address
- C. to obtain a specific MAC address when an IP address is known
- D. to forward data onward based on the destination MAC address.

ANSWER: C

43. What is a result when the DHCP servers are not operational in a network?

- A. Workstations are assigned with IP addresses in the 169.254.0.0/16 network.
- B. Workstations are assigned with the IP address 127.0.0.1.
- C. Workstations are assigned with the IP address 0.0.0.0.
- D. Workstations are assigned with IP addresses in the 10.0.0.0/8 network.

ANSWER: A

44. Which kind of message is sent by a DHCP client when its IP address lease has expired?

- A. a DHCPDISCOVER broadcast message
- B. a DHCPREQUEST unicast message
- C. a DHCPDISCOVER unicast message
- D. a DHCPREQUEST broadcast message

ANSWER: B

45. Which statement is true about DHCP operation?

- A. A client must wait for lease expiration before it sends another DHCPREQUEST message.
- B. When a device that is configured to use DHCP boots, the client broadcasts a DHCPDISCOVER message to identify any available DHCP servers on the network.
- C. The DHCPDISCOVER message contains the IP address and subnet mask to be assigned, the IP address of the DNS server, and the IP address of the default gateway.
- D. If the client receives several DHCPOFFER messages from different servers, it sends a unicast DHCPREQUEST message to the server from which it chooses to obtain the IP information.

ANSWER: B

46. What is the reason that an ISP commonly assigns a DHCP address to a wireless router in a SOHO environment?

- A. easy IP address management
- B. better network performance
- C. easy configuration on ISP firewall
- D. better connectivity

ANSWER: A

47. A network administrator is analyzing the features that are supported by different first-hop router redundancy protocols. Which statement describes a feature that is associated with HSRP?

- A. It allows load balancing between a group of redundant routers.
- B. HSRP uses active and standby routers.

C. HSRP is nonproprietary.

D. It uses ICMP messages in order to assign the default gateway to hosts.

ANSWER: B

48. Which FHRP implementation is a nonproprietary IPv4-only election protocol which has one master router per group?

A. VRRPv2

B. VRRPv3

C. HSRP for IPv6

D. HSRP

ANSWER: A

49. The address pool of a DHCP server is configured with 192.168.234.0/27. The network administrator reserves 22 IP addresses for IP phones. How many IP addresses are left in the pool to be assigned to other hosts?

A. 18

B. 21

C. 10

D. 8

ANSWER: D

50. What characteristic completes the following statement?

When an IPv6 static route is configured, it is first necessary to configure

A. an administrative distance of 2.

B. the next-hop address of two different adjacent routers.

C. a directly connected multiaccess network.

D. the "ipv6 unicast-routing" command.

ANSWER: D

51. A router has used the OSPF protocol to learn a route to the 172.16.32.0/19 network. Which command will implement a backup floating static route to this network?

- A. `ip route 172.16.32.0 255.255.224.0 S0/0/0 200`
- B. `ip route 172.16.0.0 255.255.224.0 S0/0/0 100`
- C. `ip route 172.16.32.0 255.255.0.0 S0/0/0 100`
- D. `ip route 172.16.0.0 255.255.240.0 S0/0/0 200`

ANSWER: A

52. A network administrator configures the interface fa0/0 on the router R1 with the command **ip address 172.16.1.254 255.255.255.0**. However, when the administrator issues the command **show ip route**, the routing table does not show the directly connected network. What is the possible cause of the problem?

- A. The interface fa0/0 has not been activated.
- B. The subnet mask is incorrect for the IPv4 address.
- C. The configuration needs to be saved first.
- D. No packets with a destination network of 172.16.1.0 have been sent to R1.

ANSWER: A

53. When would it be more beneficial to use a dynamic routing protocol instead of static routing?

- A. in an organization where routers suffer from performance issues
- B. on a stub network that has a single exit point
- C. in an organization with a smaller network that is not expected to grow in size
- D. on a network where there is a lot of topology changes

ANSWER: D

54. Which value in a routing table represents trustworthiness and is used by the router to determine which route to install into the routing table when there are multiple routes toward the same destination?

- A. administrative distance
- B. outgoing interface
- C. metric
- D. routing protocol

ANSWER: A

55. What security benefit is gained from enabling BPDU guard on PortFast enabled interfaces?

- A. Preventing rogue switches from being added to the network
- B. Enforcing the placement of root bridges
- C. Protecting against Layer 2 loops
- D. Preventing buffer overflow attacks

ANSWER: A

56. An IT security specialist enables port security on a switch port of a Cisco switch. What is the default violation mode in use until the switch port is configured to use a different violation mode?

- A. Disabled
- B. Restrict
- C. Shutdown
- D. Protect

ANSWER: C

57. Which protocol should be used to mitigate the vulnerability of using Telnet to remotely manage network devices?

- A. SCP
- B. SNMP
- C. SSH
- D. TFTP

ANSWER: C

58. A network administrator is configuring port security on a Cisco switch. The company security policy specifies that when a violation occurs, packets with unknown source addresses should be dropped and no notification should be sent. Which violation mode should be configured on the interfaces?

- A. Off
- B. Protect
- C. Restrict
- D. Shutdown

ANSWER: B

59. What is the result of a DHCP starvation attack?

- A. Clients receive IP address assignments from a rogue DHCP server.
- B. The attacker provides incorrect DNS and default gateway information to clients.

C. The IP addresses assigned to legitimate clients are hijacked.

D. Legitimate clients are unable to lease IP addresses.

ANSWER: D

60. What are three techniques for mitigating VLAN attacks? (Choose two.)

A. Set the native VLAN to an unused VLAN.

B. Enable BPDU guard.

C. Enable Source Guard.

D. Enable trunking manually.

E. Disable DTP.

F. Use private VLANs.

ANSWER: A,D,E

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