

SYSTEMS ADMINISTRATION USING CISCO® (315)

REGIONAL – 2016

Multiple Choice:

Multiple Choice (50 @ 10 points each) _____ (500 points)

TOTAL POINTS _____ (*500 points*)

Failure to adhere to any of the following rules will result in disqualification:

- 1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.**
- 2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.**
- 3. Electronic devices will be monitored according to ACT standards.**

No more than 60 minutes testing time

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Identify the letter of the choice that best completes the statement or answers the question. Mark A if the statement is true. Mark B if the statement is false.

1. Cisco refers to the creation of online communities as:
 - a. Global communities
 - b. The Internet
 - c. The Human Network
 - d. Online Communities

2. You want to see if any VLANs have been created on the switch. Which command do you enter at the prompt?
 - a. Show flash/
 - b. Show dir flash:
 - c. Dir flash/
 - d. Dir flash:

3. The OSI Model consists of seven layers. These layers are:
 - a. Application, Transport, Physical, Data Link, Presentation, Session, and Network
 - b. Transfer, Application, Physical, Network, Data Link, Session, and Presentation
 - c. Internet, Data Link, Transport, Session, Application, Presentation, and Network Access
 - d. Session, Data, Network, Transport, Presentation, Network, and Application

4. At the console prompt,-- **Switch(config) #**, the Administrator decides to change the name of the switch. The following command is entered: **hostname SalesDepartment**. What will be the displayed prompt after issuing the command?
 - a. SalesDepartment(config)#
 - b. Sales(config)#
 - c. Switch(config)#
 - d. Switch#

5. Based on the given MAC address: 30:ae:12:34:bd:56, which numbers/letters indicate the NIC serial number?
 - a. 34:bd:56
 - b. 12:34:bd
 - c. 30:ae:12:34:bd:56
 - d. 30:ae:12

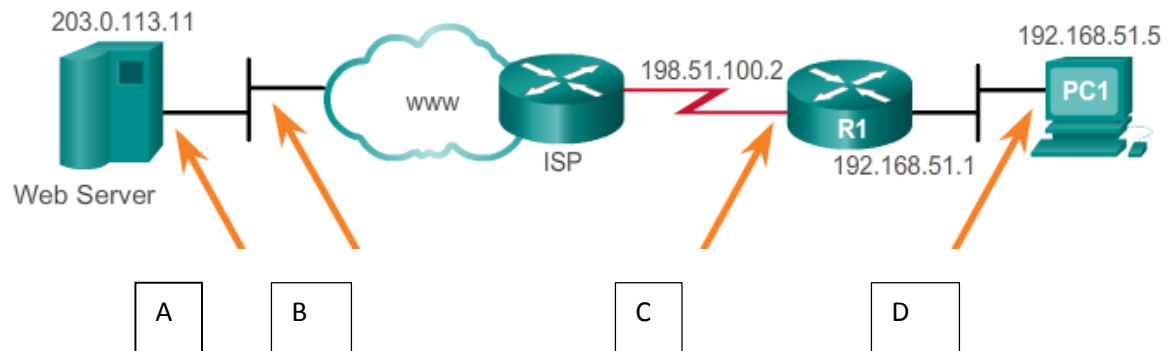
6. A MAC address is a _____ bit address.
 - a. 32
 - b. 48
 - c. 64
 - d. 128
7. What factor listed usually does *not* influence throughput?
 - a. Amount of traffic
 - b. Type of traffic
 - c. Type of media used
 - d. Latency created by the number of devices
8. You would use a _____ cable to connect a PC to a FastEthernet port on a Router.
 - a. Rollover
 - b. Straight through
 - c. Cross over
 - d. Fiber Optic
9. What wireless standard supports a maximum bandwidth of 54 Mb/s and a frequency of 2.4 GHz?
 - a. 802.11a
 - b. 802.11b
 - c. 802.11n
 - d. 802.11g
10. Which OSI layer prepares the network layer packets for transmission and controls access to the physical media?
 - a. Session
 - b. Physical
 - c. Data-Link
 - d. Transport
11. The two network topologies used for connections and placement of devices and interconnections are:
 - a. Physical and Virtual
 - b. Star and Bus
 - c. Logical and Physical
 - d. Token Ring and Star

12. The WAN topology with the highest availability is:
- Point-to-Point
 - Bus
 - Hub and Spoke
 - Mesh
13. Most common LAN topology is:
- Bus
 - Star
 - Ring
 - Extended Star
14. What is the method used to manage contention-based media in a wired network?
- CSMA/DC
 - CMSA/DC
 - CSMA/CD
 - CMSA/CS
15. The Administrator wants to add an IP address to a FastEthernet port on the router. At the prompt, Router(config)# the following command is entered: **ip address 192.168.1.1 255.255.255.0**. What will be displayed after completing that command?
- Router(config)#
 - Router(config)# incomplete command
 - Router(config-if)#
 - % Invalid input detected at `^` marker
16. What is one way ARP can collect MAC addresses?
- Monitor traffic that occurs on the local network and record the source IP and MAC address for the ARP table
 - Send out a multicast address across the network and resolve the MAC address from the response
 - A network broadcast message is sent across the LAN requesting MAC addresses
 - Ping the default gateway and view the response using the arp-a command
17. Which protocol is considered a connectionless protocol?
- UDP
 - TCP
 - IP
 - IPX

18. A default gateway is *not* required for:
- Local default route
 - Connections to forward packets to remote networks
 - Connections to forward packets to local networks
 - Local Network route
19. The Administrator enters, **enable secret**, at the **Router(config)#** prompt; what affect does this have on the router?
- Protects access to the Privileged EXEC mode
 - Changes the Global Configuration mode password
 - Changes the Privileged Exec mode password
 - Protects access to global configuration mode
20. The layer responsible for establishing communications and transmitting data is _____.
- Network
 - Data-Link
 - Transport
 - Session
21. Streaming video uses which protocol?
- IP
 - UDP
 - TCP
 - VoIP
22. An IPv4 address contains how many bits?
- 16
 - 32
 - 64
 - 128
23. The private IP address range in a Class B network address starts with:
- 172.16.1.0
 - 172.16.0.0
 - 172.160.1.0
 - 172.160.0.0

24. A 48-port switch with only the default VLAN configured has a computer connected to each port and all ports are on. What is the number of broadcast domains?
- 48
 - None
 - One
 - 24
25. Define the term *broadcast domain*.
- A set of devices that if one device sends a broadcast frame all other devices will receive that frame in the same broadcast domain.
 - A set of devices that will send out frames from all ports except the ingress port.
 - All devices, equipment, and hosts on a LAN segment.
 - A domain used to send information to all users on that network segment.
26. If you borrow 3 bits from the host portion of the network address when subnetting a network, how many subnets will you create?
- 3
 - 4
 - 6
 - 8
27. Given the network address 172.16.0.0/18, what is the subnet mask address?
- 255.255.128.0
 - 255.255.192.0
 - 255.255.240.0
 - 255.255.255.0
28. A simple method that Administrators use to help secure the switch from unauthorized access is to _____.
- unplug cables from unused ports.
 - set up a traffic monitoring system on the switch.
 - disable all unused ports.
 - keep the switch locked in the MDF.
29. VLANs are implemented for which of the following reasons:
- Segmentation of the network for security purposes
 - To improve network performance
 - Implement access and security policies according to specific groups
 - All of the above

30. Which of the listed port numbers are for FTP?
- 18, 19
 - 20, 21
 - 22, 23
 - 24, 25
31. When designing an ACL, which is *not* the rule of Three P's?
- One ACL per protocol
 - One ACL per direction
 - One ACL per device
 - One ACL per interface
32. If the Network Administrator is writing an ACL and enters the following at the prompt
- ```
| Router(config)#access-list 103 permit tcp 192.168.30.0 0.0.0.255 any eq 21
```
- what application is being allowed through this ACL?
- HTTP
  - FTP
  - Telnet
  - SSH
33. What is a trunk connection?
- Data and voice sent on the same interface
  - The link of a VLAN that is referred to as the native VLAN for that specific port
  - Link that provided access for multiple VLANs
  - VLAN connection to the default gateway



34. Refer to the above diagram to answer questions 34 and 35.

Segment "A" refers to which NAT address:

- a. Inside Local
- b. Outside Global
- c. Inside Global
- d. Outside Local

35. Segment "C" refers to which NAT address?

- a. Inside Local
- b. Outside Global
- c. Inside Global
- d. Outside Local

36. STP (Spanning Tree Protocol) was developed to address which of the following issues?

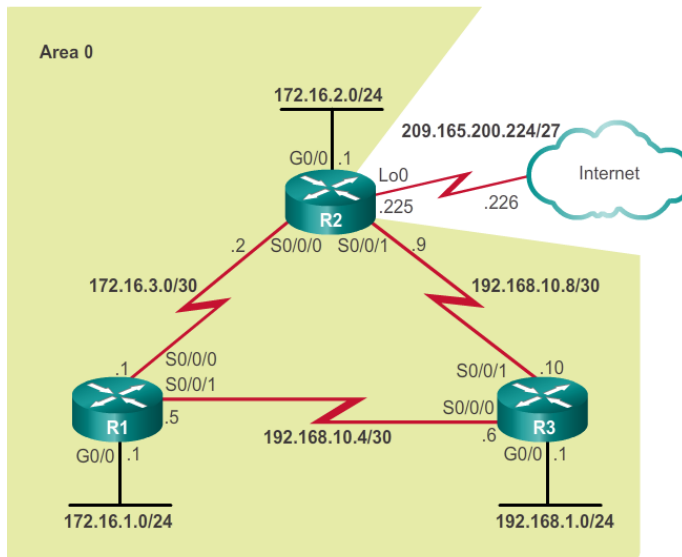
- a. Loops and duplicate frames
- b. Loops and broadcast storms
- c. Duplicate frames and link redundancy
- d. Loops and port aggregation

37. STP uses the Spanning Tree Algorithm (STA) which defines the port roles based on path cost. Which of the roles listed below are *not* roles defined by the STA?

- a. Root Port
- b. Alternate Port
- c. Edge Port
- d. Designated Port



38. Which of the devices listed below will the Network Administrator most commonly use to connect multiple devices on the same LAN?
- Router
  - Switch
  - Hub
  - Bridge
39. What is the *most* cost-effective method of relieving port congestion caused by increased traffic between switches?
- Add a router between switches
  - Port aggregation
  - Increase the number of VLANs
  - Increase the switch-to-switch uplink connection speed
40. The Bluetooth IEEE 802.15 standard long distance range is \_\_\_\_\_.
- 10 meters
  - 20 meters
  - 50 meters
  - 100 meters
41. When wireless clients interconnect via a wireless router or AP, it is considered to be a(n) \_\_\_\_\_.
- Ad Hoc mode
  - Basic Service Area (BSA)
  - Infrastructure mode
  - Extended Service Set (ESS)



42. Refer to the diagram above. If the Network Administrator has decided to create a default route to the service provider, what is the command to create the default route?
- ip route 0.0.0.0 0.0.0.0 209.165.200.225
  - ip route 0.0.0.0 0.0.0.0 209.165.200.226
  - ip route 209.165.200.225 0.0.0.0 0.0.0.0
  - ip route 209.165.200.226 0.0.0.0 0.0.0.0
43. A Network Administrator is tasked with designing an expanded network for the company. After discussion with various branches of the company, it is decided to use the Cisco three-layer hierarchical model design. Which of the layers is *not* part of this model?
- Core
  - Access
  - Intermediate
  - Distribution
44. WAN operations focus mainly of which two layers?
- One and two
  - Three and four
  - Five and six
  - Six and seven

45. On a WAN connection, which connection requires a clock rate?
- DTE
  - CPE
  - DCE
  - CO
46. A disadvantage of leased lines in a WAN architecture is \_\_\_\_\_.
- simplicity
  - quality
  - cost
  - availability
47. A WAN technology that provides the user with cost savings, security, scalability, and compatibility with broadband technologies is \_\_\_\_\_.
- ISDN
  - DSL
  - Frame-Relay
  - VPN
48. Which WAN technology utilizes a permanent dedicated point-to-point connection?
- Frame-Relay
  - ATM
  - VPN
  - Leased lines
49. Time-Division Multiplexing, (TDM) operates at which layer of the OSI model?
- Layer 1
  - Layer 3
  - Layer 5
  - Layer 2
50. Which tunneling protocol, developed by Cisco, can encapsulate a wide variety of packets inside IP tunnels, creating virtual point-to-point links to Cisco routers at remote points over an IP internetwork?
- L2TP
  - SSH
  - VPN
  - GRE