**Contestant Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Rank: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



**NETWORK ADMINISTRATION USING CISCO**

(315)

**REGIONAL 2022**

**CONCEPT KNOWLEDGE:**

Multiple Choice (50 @ 2 points each) (100 points)

**TOTAL POINTS (100 points)**

**Test Time: 60 minutes**

**GENERAL GUIDELINES:**

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

1. Member must hand in this test booklet and all printouts if any.
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 (handwritten, photocopied, or keyed) are allowed in the testing area.
3. Electronic devices will be monitored according to ACT standards.

**MULTIPLE CHOICE**

Identify the letter of the choice that *best* completes the statement or answers the question.

1. If a customer needs to deploy cooper cabling to support 1Gbps speeds, he would use\_\_\_\_\_\_\_.  
   a. Cat3  
   b. Cat5  
   c. Cat5e  
   d. Cat6
2. Which layer from the OSI model correspond to the TCP/IP model Network Access Layer?  
   a. Network Layer  
   b. Session Layer  
   c. Application Layer   
   d. Physical Layer
3. Which IP address is a Private address?  
   a. 192.154.253.141  
   b. 192.167.95.3  
   c. 10.255.214.65   
   d. 172.32.1.24
4. How many copper wires does a UTP cable have?  
   a. 4  
   b. 6  
   c. 8   
   d. 5
5. Where is the configuration stored on a Cisco switch?  
   a. ROM   
   b. RAM   
   c. USB   
   d. NVRAM
6. Which protocol is used for transport when utilizing TFTP?  
   a. UDP   
   b. HTTP   
   c. IP   
   d. TCP
7. Which layer performs the routing over an IP network?  
   a. Session   
   b. Network  
   c. Transport   
   d. MAC
8. What type of connection is commonly used on a GbE port?  
   a. QSFP  
   b. SFP  
   c. RJ-45   
   d. RJ-54
9. Which module is used for 40 GbE connections?  
   a. SFP   
   b. GBIC  
   c. SFP+  
   d. None are correct
10. Which two of the following are transport layer protocols?  
    a. TCP and HTTP   
    b. HTTP and HTTPS  
    c. TCP and UDP   
    d. UDP and HTTP
11. ARP is used for \_\_\_\_\_\_\_.  
    a. IP to hostname resolution  
    b. Hostname to IP resolution  
    c. IP to MAC resolution   
    d. MAC to IP resolution
12. Which of the following is an IP routing protocol?  
    a. RIP   
    b. HTTP   
    c. ARP   
    d. ICMP
13. Which OSI layer works with bits?  
    a. Network   
    b. Physical   
    c. Data-link   
    d. Session
14. What metric is used to know how many packets are discarded due to congestion?  
    a. Loss   
    b. Delay   
    c. Abort  
    d. Bandwidth
15. Which plane is used for Spanning-Tree Protocol?  
    a. Control plane   
    b. Switch plane  
    c. Management plane  
    d. Data plane
16. What feature of a device’s IP settings defines what other IP addresses the host should be able to reach on its own local network?
    1. Subnet Mask
    2. IP Address
    3. Default Gateway
    4. TCP Sliding Windows Size
17. What cable is usually flat and has the pinout of 1-2-3-4-5-6-7-8 to 8-7-6-5-4-3-2-1?
    1. Straight-Through cable
    2. Cross-Over cable
    3. Serial cable
    4. Console cable
18. How many bits are in IP address?
    1. 64
    2. 32
    3. 16
    4. 48
19. How many bits are in a Subnet Mask?
    1. 16
    2. 32
    3. 48
    4. 64
20. How many bits are in a MAC address?
    1. 16
    2. 32
    3. 48
    4. 64
21. A MAC address allows what kind of communication?
    1. Global
    2. Across Networks
    3. Multi-Hop
    4. Local
22. What is time most simple way to verify a direct connection between two PCs on the network is working at layer 1 of the OSI model?
    1. Check the ARP table on both PCs to verify they see the others MAC address
    2. Copy a file from a share on one PC to the other
    3. You observe Link-Lights on the Network Interface Cards
    4. Check Spanning-Tree Protocol to verify the ports were moved into a forwarding state
23. What allows a PC to communicate across routed networks to other PCs?
    1. IP Address
    2. MAC Address
    3. Physical Address
    4. Mailing Address
24. When creating a common cable for use in an Ethernet network, the T-568A standard begins with what two colors?
    1. White/Orange and Orange
    2. White/Blue and Blue
    3. White/Brown and Brown
    4. White/Green and Green
25. When creating a common cable for use in an Ethernet network, what connector is used on the ends?
    1. RS-232
    2. RJ-45
    3. RJ-11
    4. RG-59
26. What cable allows two like devices to be communicate by being directly connected to one another?
    1. Straight-Through cable
    2. Console cable
    3. Serial cable
    4. Cross-Over cable
27. What is unicast traffic?
    1. One-to-One traffic
    2. One-to-Many traffic
    3. One-to-All traffic
    4. One-to-None traffic
28. What is the purpose of Spanning-Tree Protocol?
    1. Prevent traffic storms in the network caused by layer-2 loops
    2. It allows switches to communicate and distribute routes with one another
    3. Allows a host’s connection to span multiple ports a switch
    4. Allows multiple links between switches to work and act as a single connection
29. How many objects can exist in a network with a subnet mask of 255.255.255.0?
    1. 126
    2. 255
    3. 254
    4. 127
30. What is reason a network administrator would use a subnet mask of 255.255.0.0 rather than 255.255.255.0?
    1. Can charge more to configure the network
    2. It is more efficient
    3. The network segment needs more than 254 hosts
    4. It allows for multiple private IP networks to be used
31. What command gets a user into Privilege EXEC mode on a Cisco router?
    1. enter
    2. allow
    3. configure terminal
    4. enable
32. What command gets a user into Global Configuration mode on a Cisco router?
    1. enter
    2. allow
    3. configure terminal
    4. enable
33. What command is used to save the configure on a Cisco switch?
    1. save config
    2. copy running-config startup-config
    3. checkpoint config
    4. save
34. What command is used to see the current configuration of a Cisco router?
    1. show running-config
    2. display running-config
    3. show config
    4. display config
35. What command is used to display the status of the interfaces on a Cisco switch?
    1. show port
    2. show interface
    3. show connections
    4. show links
36. What TCP port does FTP control traffic usually use?
    1. 53
    2. 22
    3. 21
    4. 80
37. What UDP port is used by DNS traffic?
    1. 53
    2. 22
    3. 21
    4. 80
38. HTTP and HTTPS traffic use the same TCP Port for communication.
    1. True
    2. False
39. An Ethernet switch allows devices to communicate in a local network.
    1. True
    2. False
40. A router stops the spread of layer-2 broadcasts and segments networks.
    1. True
    2. False
41. Cisco devices auto save their config as changes are made.
    1. True
    2. False
42. To connect an end device such as a PC to the network, you use a straight-through cable.
    1. True
    2. False
43. TCP/IP version 4 is the most widely adopted networking protocol.
    1. True
    2. False
44. How many bits are in an IPv6 address?
    1. 64
    2. 128
    3. 48
    4. 256
45. How many possible IPv6 addresses are there?
    1. 4,294,967,296
    2. 340,282,366,920,938,463,463,374,607,431,768,211,456
    3. 18,446,744,073,709,551,616
    4. 65,536
46. IPv6 exclusively uses Broadcast type traffic.
    1. True
    2. False
47. Which of the following is a valid IPv6 Address?
    1. 2101:FD00:1C::20:ABCD:1
    2. 2101:FD00:1C::20:ABCD::1
    3. 2101:FD:1C::20:ABCQ:1
    4. 2101:FD006:1C20:ABCD::1
48. IPv6 is directly compatible with IPv4.
    1. True
    2. False
49. What subnet mask matches the CIDR notation /16?
    1. 255.255.255.0
    2. 255.255.0.0
    3. 255.0.0.0
    4. 0.0.0.0
50. What CIDR notation matches the Subnet Mask 255.255.255.0?
    1. /8
    2. /16
    3. /24
    4. /32