

COMPUTER NETWORK TECHNOLOGY (300)

REGIONAL – 2019

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 sixty (60) minutes testing time

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Workplace Skills Assessment Program competition.

MULTIPLE CHOICE

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. How many collision domains are created by default on a switch with 12 data ports?
 - a. 0
 - b. 1
 - c. 6
 - d. 12

2. By default, how many broadcast domains does a router with three data interfaces create?
 - a. 1
 - b. 0
 - c. 3
 - d. 6

3. A hub operates at which layer of the OSI model?
 - a. Layer 1
 - b. Layer 2
 - c. Layer 3
 - d. Layer 4

4. MIMO is found in which technology?
 - a. 802.11a
 - b. 802.11b
 - c. 802.11g
 - d. 802.11n

5. What is the main job of DNS?
 - a. To resolve names to IP addresses
 - b. To resolve a Layer 2 address to an IP address
 - c. To resolve a computer name to the port for the service
 - d. To load balance between multiple systems

6. Your work peer has set up DHCP to provide a specific address to a network printer based on its MAC address. What is the feature called?
 - a. IP Options
 - b. DHCP Relay
 - c. Reservation
 - d. Lease

7. What does the term *tethering* mean?
 - a. Sharing your wireless Internet access from a phone
 - b. Securing a phone using a laptop
 - c. Transferring files directly between laptops
 - d. Tracking a person using cellphone

8. What type of cable would be used to connect two legacy switches directly?
 - a. Straight-through
 - b. Crossover
 - c. Rollover
 - d. Patch

9. What connector is often referred to as a bayonet connector?
 - a. LC
 - b. SC
 - c. MTRJ
 - d. ST

10. Which of the following topologies offers the highest level of redundancy?
 - a. Full mesh
 - b. Hub-and-spoke
 - c. Bus
 - d. Partial mesh

11. What type of network often features an access point?
 - a. WAN
 - b. LAN
 - c. WLAN
 - d. PAN

12. Which type of network is based on network clients sharing resources with one another?
 - a. Client-server
 - b. Client-peer
 - c. Peer-to-peer
 - d. Peer-to-server

13. A client with an IP address of 172.16.18.5/20 belongs to what network?
 - a. 172.16.16.0/20
 - b. 172.16.64.0/20
 - c. 172.16.96.0/20
 - d. 172.16.128.0/20

14. Which is *not* a new feature of IPv6?
 - a. Simplified header
 - b. No fragmentation
 - c. Transition mechanisms
 - d. Subnet mask elimination

15. What is the default mask for a Class A network?
 - a. 255.0.0.0
 - b. 255.255.0.0
 - c. 255.255.255.0
 - d. 255.255.255.255

16. What is the technology invented by Cisco that uses the concept of a default gateway address assigned to a virtual router?
 - a. CARP
 - b. VRRP
 - c. HSRP
 - d. BGP

17. What protocol is used to request a MAC address that corresponds to a known IPv4 address on the local network?
 - a. IGMP
 - b. TTL
 - c. ICMP
 - d. ARP

18. Which routing protocol uses the concept of areas in its operation?
 - a. IS-IS
 - b. BGP
 - c. OSPF
 - d. RIP

19. Where do a majority of security attacks come from?
 - a. From outside the company via the Internet
 - b. From inside the company
 - c. From outside the company via a VPN
 - d. From a partner organization

20. Which of the following is *not* typical when implementing a network for a client?
 - a. Characterizing the existing network
 - b. Identifying the customer network requirements
 - c. Designing the network you propose
 - d. Targeting the very latest technologies

21. SYSLOG messages are categorized most often based on what?
 - a. Time of day
 - b. Subfacility
 - c. Severity
 - d. Time zone

22. Which device can often help you secure your network environment?
 - a. Cable tester
 - b. Protocol analyzer
 - c. SNMP
 - d. Link monitor

23. What method can be used for transferring SYSLOG messages to a central location?
 - a. MRTG
 - b. Telnet
 - c. SSH
 - d. FTP

24. What is the default duplex setting for many networking devices?
 - a. Auto
 - b. Half
 - c. Full
 - d. None

25. Isolation based on security parameters is often used with which technology?
 - a. WEP
 - b. NAC
 - c. IDS
 - d. Firewall

26. What is an excellent strategy when it comes to dealing with the security concerns presented by legacy systems?
 - a. Replacement
 - b. Honeypotting
 - c. Segmentation
 - d. Firewalling

27. What is an approach often used by security engineers when it comes to networking?
 - a. A permissive approach
 - b. A restrictive approach
 - c. Create a testing lab
 - d. A top-down approach

28. What technology is designed to attract attackers
 - a. Firewall
 - b. NAC
 - c. WEP
 - d. Honeypot

29. What keypress at Windows startup can access the advanced startup options?
 - a. Ctrl
 - b. F8
 - c. Del
 - d. Start

30. You are troubleshooting an issue for your employer. He downloaded new drivers for his audio device, and now the system is not capable of playing sound. What should you do?
- Roll back to the previous drivers
 - Reinstall the OS
 - Use the Last Known Good option at startup
 - Use the System Restore feature
31. What is the older PoE standard?
- 802.3af
 - 802.3at
 - 802.1D
 - 802.1w
32. What ports are on a Cisco switch by default for Telnet or SSH access?
- 0 - 4
 - 4 - 8
 - 1 - 5
 - 0 - 5
33. What protocol would you use to tag traffic for a VLAN? You must use a standards-based technology.
- ISL
 - EISL
 - 802.1Q
 - VTP
34. Your AP's connection to its local switch should be what?
- Half-duplex
 - Auto-negotiation
 - Full duplex
 - None of these
35. What frequency range does 802.11g use?
- 5 GHz
 - 10 GHz
 - 8 GHz
 - 2.4 GHz
36. The process of adding information to the data at each layer of the OSI model is known as what?
- De-encapsulation
 - Encapsulation
 - CRC
 - Padding

37. What is one way to perform a man-in-the-middle attack?
- a. Brute force
 - b. Social engineering
 - c. ARP poisoning
 - d. Botnet multiplication
38. You are very concerned about social engineering attacks succeeding in your network. What is a first line of defense against such attacks?
- a. Employee training
 - b. Anti-malware software
 - c. Firewalls
 - d. Proper documentation
39. What OSI layer might you start at if you are following a top-down approach to troubleshooting the network?
- a. Physical
 - b. Data link
 - c. Session
 - d. Application
40. You have done some initial testing at the command line and you have decided to start troubleshooting the network layer. What method are you using?
- a. Top down
 - b. Bottom up
 - c. Divide and conquer
 - d. Random
41. Refer to the exhibit in the box below. What command produced these results?

```
Server: 8.8.8.8
Address: 8.8.8.8#53

Non-authoritative answer:
www.yahoo.com canonical name = fd-fp3.wg1.b.yahoo.com.
Name: fd-fp3.wg1.b.yahoo.com
Address: 98.139.180.149
Name: fd-fp3.wg1.b.yahoo.com
Address: 98.139.183.24
```

- a. nslookup
- b. traceroute
- c. ping
- d. ifconfig

42. Refer to the exhibit in the box below. What command produced these results?

```
lo0: flags=8049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
options=3<RXCSUM,TXCSUM>
inet6 ::1 prefixlen 128
inet 127.0.0.1 netmask 0xff000000
inet6 fe80::1%lo0 prefixlen 64 scopeid 0x1
nd6 options=1<PERFORMNUD>
```

- a. nslookup
- b. traceroute
- c. ping
- d. ifconfig

43. You need to measure voltage, current, and resistance. What should you use?

- a. Toner probe
- b. Multimeter
- c. Wi-Fi analyzer
- d. Speed test site

44. For lower-security environments, what WPA option exists?

- a. DES
- b. 3DES
- c. PSK
- d. 802.1X

45. What is the term for the weakening of a signal over distance?

- a. Attenuation
- b. Crosstalk
- c. Open
- d. Short

46. If your first troubleshooting strategy is to ping your default gateway, what are you testing?

- a. Layer 2
- b. Layer 6
- c. Layer 3
- d. Layer 4

47. What transport layer protocol features connection-oriented communications?

- a. UDP
- b. ICMP
- c. IGMP
- d. TCP

48. What protocol is commonly used to carry voice over IP traffic through the network?

- a. SSH
- b. POP3
- c. RTP
- d. ICMP

49. What is Layer 6 of the OSI model?

- a. Session layer
- b. Presentation layer
- c. Network layer
- d. Transport Layer

50. What port number is used by HTTP?

- a. 443
- b. 125
- c. 80
- d. 23