Overview

The ability to evaluate the needs of an organization and then design and implement network solutions is a valuable skill in today's connected workplace. This event provides recognition for FBLA members who demonstrate an understanding of and ability to apply these skills.

This is a team event composed of two or three members. This event consists of two parts: an objective test and a performance. The objective test is taken collaboratively by the team members and the top ten (10) teams scoring the highest on the objective test will advance to the final round and participate in the performance component.

Competencies and Task Lists

http://www.fbla-pbl.org/docs/ct/FBLA/NETWORKDESIGN.pdf

Web Site Resources

- Network Management Definitions
  http://whatis.techtarget.com/glossary/network-management-category-.html

NETWORK DESIGN SAMPLE QUESTIONS

1. Which layer of the OSI model has the important role of providing error checking?
   a. presentation layer
   b. session layer
   c. application layer
   d. transport layer

2. _____ is the type of media access method used by NICs that listen to or "sense" the cable to check for traffic ad send only when they hear that no one else is transmitting.
   a. CSMA/CD
   b. Token passing
   c. Demand priority
   d. CSMA/CA

3. What part of an HP LaserJet printer is malfunctioning if you receive a "50 Service" error?
   a. AC power supply
   b. laser scanner assembly
   c. fuser
   d. toner cartridge

4. The message "missing operating system" appears when booting up the PC from the hard drive. To attempt a repair to the drive without losing data, you should first try which of the following?
   a. boot to a bootable floppy disk and type SYSTEM C:
   b. repartition the drive using FDISK
   c. boot to a bootable floppy disk and type SYS C:
   d. boot to a bootable floppy disk and type FORMAT C: /S

5. What equipment type limits network equipment, so it cannot send and receive at the same time?
   a. half-duplex
   b. muted
   c. single-duplex
   d. IEEE

6. UTP network cable typically has what type of connectors at each end?
   a. RJ-11
   b. RJ-45
   c. AUI
   d. BNC

7. Which one of the following authentication protocols supports the use of smart cards?
   a. SPAP
   b. MS-CHAP
   c. EAP
   d. MS-CHAP2

8. Why would a network administrator want to limit the size of failure domains when designing a network?
   a. reduces the impact of blocking broadcast packets at the edge of the local network
   b. reduces the impact of a key device or service failure
   c. reduces the impact of Internet congestion on critical traffic
   d. reduces the effect of Ethernet collisions

9. Domain Name Services on a UNIX or Linux system is referred to as what service?
   a. NAME
   b. DHCP
   c. HOST
   d. BIND

10. What is the purpose of Spanning Tree Protocol?
    a. create smaller collision domains
    b. prevent routing loops on a router
    c. create smaller broadcast domains
    d. prevent loops at Layer 2

11. What must be used to set IRQs on legacy ISA network interface cards with no jumpers?
    a. Device manager
    b. COMS
    c. DIP switches
    d. Configuration software

12. Windows NT organizes user accounts into _____ that provide the same permissions to all members.
    a. teams
    b. groups
    c. account headers
    d. workgroups

13. What does it mean if a network administrator can PING a resource server using its IP address, but **not** its Internet name?
    a. The computer is not configured to use DNS.
    b. The computer is not configured to use DHCP.
    c. The computer is not configured to use WINS.
    d. The computer is not configured to use ARP.

14. _____ is immune to electromagnetic or radio-frequency interference.
    a. Twisted-pair cabling
    b. Fiber-optic cabling
    c. CSMA/CD
    d. Broadband coaxial cabling

15. ACL statements operate in sequential, logical order. If a condition match is true, the rest of the ACL statements are **not** checked. If all of the ACL statements are unmatched, what happens to the packet?
    a. The implicit deny any statement placed at the end of the list will cause the packets to be dropped.
    b. The implicit permit any statement placed at the end of the list will allow the packets to flow through uninhibited.
    c. The packets will be placed in a buffer and forwarded when the ACL is removed.
    d. The packets will be sent to the source with an error notification message.

16. Workgroup network switches typically function at what layer of the OSI model?
    a. Layer 4
    b. Layer 2
    c. Layer 3
    d. Layer 1

17. What is the binary representation of 128.1.128.7?
    a. 10001111.00011111.10000111.00000111
    b. 10001111.01100001.10001100.11000111
    c. 11111111.11111111.11111111.11111001
    d. 10000000.00000001.10000000.00000111

18. What TCP/IP utility would you use to check the pathways and status of network devices between two Internet paths/sites?
    a. NetStat
    b. Tracert
    c. Nslookup
    d. Ping

19. Due to the drop in hard drive storage, a newer backup strategy is emerging that allows for very quick backup and recovery while still using older technologies for archival purposes and is called:
    a. tape backup
    b. tape-to-disk-to-disk backup
    c. disk-to-disk-to-tape backup
    d. disk backup

20. What RAID format is considered the best by most administrators because it does **not** require the operating system to handle most of the data striping and parity calculations?
    a. Master RAID
    b. Super RAID
    c. Software RAID
    d. Hardware RAID

21. The administrator has set a backup routine that includes differential backups Monday through Friday with a full (normal) backup on Sunday. Your system crashes Wednesday morning. What tapes will be needed for the restore?
    a. last Sunday and Tuesday
    b. last Friday, Sunday, and Tuesday
    c. all of last week's tapes, Monday-Friday, Sunday, and Monday the current
    d. last Sunday, Monday, and Tuesday

22. When configuring DNS with a new Domain entry you create a new:
    a. network
    b. zone
    c. stub
    d. host

23. Your client reports that when they print their word processing document it appears on the printer as X!###$DF()+~~ and continues to print numerous pages with random characters. What is most likely the problem?
    a. wrong printer cable
    b. wrong printer driver
    c. wrong font
    d. wrong paper format

24. Given the IP address and subnet mask of 192.168.134.56 and 255.255.255.224, on which subnet does this address reside?
    a. 192.168.134.32
    b. 192.168.0.0
    c. 192.168.134.48
    d. 192.168.134.0

25. FTP provides a reliable, connection-oriented service for transferring of files. Which transport layer protocol is used for data transfer when this service is being used?
    a. DNS
    b. IP
    c. TFTP
    d. TCP

26. Which protocol is used by e-mail servers to communicate with each other?
    a. HTTP
    b. FTP
    c. SMTP
    d. POP

27. What does a switch do when it receives a frame and the source address is unknown?
    a. The switch will issue an ARP request to confirm that the source exists.
    b. The switch will map the source address to the port on which it was received.
    c. The switch will discard the frame.
    d. The switch will flood the frame to all attached devices.

28. Which one of the following start the test of destination reachability?
    a. echo reply issued by destination
    b. echo request issued by source
    c. echo request issued by destination
    d. echo reply issued by source

29. What units are used to measure Internet bandwidth?
    a. bytes per second
    b. bits per second
    c. megabytes per second
    d. hertz

30. Which port numbers are used by PAT to create unique global addresses?
    a. 1024 and below
    b. 64,000 and above
    c. 1025 and above
    d. 255 and below