CONTESTANT ID# _____

Time_____

Rank_____

COMPUTER NETWORK TECHNOLOGY
(40)

Regional 2012

TOTAL POINTS _____ *(450)*

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.**

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1. You need to find the approximate length of a fiber optic cable segment. You need to get this information as quickly as possible. What should you use?
   A) Multimeter
   B) Temperature monitor
   C) Cable tester
   D) OTDR

2. A malicious program that resides in memory, copies itself, and sends copies of itself to other network hosts, is known as a _____.
   A) virus
   B) worm
   C) Trojan
   D) man-in-the-middle

3. What utility would you use to check the IP configuration on a Windows Vista system?
   A) netstat
   B) winipcfg
   C) ping
   D) ipconfig

4. You need to extend your office network, but you cannot run new cable in the area. Devices should be addressed as part of an existing subnet that is wired as 10BaseT. What should you do first?
   A) Deploy a wireless access point
   B) Deploy a bridge
   C) Deploy a router
   D) Deploy a basic firewall

5. You connect the receive connector of a fiber optic cable to its send connector to troubleshoot a problem. This type of connection is known as a _____.
   A) loopback
   B) patch
   C) crossover
   D) rollover

6. A Windows computer is unable to connect to any network resources after restarting. You suspect that the network adapter or its drivers are not initializing properly during startup. You need to determine if this is the problem. What should you do first?
    A) Run a connectivity test.
    B) Use a packet sniffer to capture network traffic
    C) Check archived log entries
    D) Review the computer's event logs

7. Which of the following services or protocols use SSH technology to provide additional security to communications?
    A) SCP
    B) SFTP
    C) SNMP
    D) SMTP

8. What is the most likely cause of interference on an 802.11g network?
    A) Cordless phones
    B) Fluorescent lights
    C) EMI
    D) Blocked line of sight

9. What would one use a RJ11 connector on?
    A) Local Printer
    B) Network server
    C) Analog desk phone
    D) Ceiling projector

10. Which connector on a USB cable is on the computer side, (when not dealing with a hub)?
    A) A-Connector
    B) B-Connector
    C) C-Connector
    D) D-Connector

11. Which layer of the OSI model is responsible for data compression and encryption?
    A) Presentation layer
    B) Transport layer
    C) Application layer
    D) Data Link layer

12. What is the binary representation of the host portion of the IPv4 address 198.24.233.192/24?
   A) 11000000
   B) 01000010
   C) 01100011
   D) 11000110

13. When would you use a port scanner to test your perimeter network?
   A) To tell how well your network responds to threats
   B) To identify potential holes in network firewalls
   C) To determine if your network's Web servers are operating properly
   D) To see if your proxy server is forwarding traffic

14. Cat 3 cable can be used for 1-Gig network connections. (True or False)
   A) True
   B) False

15. Both Cat 5e and Cat 6 can be used for 10-gig network connections. (True or False)
   A) True
   B) False

16. Which wireless standard operates at 5 GHz, offers a range of approximately 35 meters, and provides transmission speeds of up to 54 Mbps?
   A) 802.11b
   B) 802.11g
   C) 802.11n
   D) 802.11a

17. The primary benefit of using STP over UTP is that STP _____.
   A) has a higher transmission speed
   B) has better immunity to EMI
   C) supports longer cable distance
   D) is less expensive

18. What is the basic purpose of a firewall system?
   A) It provides a single point of access to the Internet
   B) It caches commonly used web pages, thereby reducing the bandwidth demands on an Internet connection
   C) It allows hostnames to be resolved to IP addresses
   D) It protects one network from another by acting as an intermediary system

19. What is a standard patch cable made from?
   A) Twisted pair cable
   B) Fiber-optic cable
   C) RG-48 Coax cable
   D) 10Ga. Romex

20. What is the end on a standard network cable called?
   A) PL-259
   B) TNC Connector
   C) RJ-45
   D) RJ-11

21. If you turn your computer off in an electrical storm, it is completely safe. (True or False)
   A) True
   B) False

22. Which of the following pieces of information is not likely to be supplied via DHCP?
   A) IP address
   B) NetBIOS computer name
   C) Subnet mask
   D) Default gateway

23. Which Transmission Control Protocol (TCP) port is used to resolve names into IP Addresses?
   A) 53
   B) 69
   C) 21
   D) 22

24. A network user calls you to report a problem with his computer. What should you do first?
   A) Try to identify how many computers are affected by the same problem
   B) Determine what has recently changed on the network
   C) Have the user install all available updates and patches
   D) Gather as much information as you can about the problem

25. You need to select a backbone network cable. The cable must run 500 meters and provide a bandwidth of at least 1 Gbps. The cable must be immune to eavesdropping.
What is the least expensive option?
   A) 1000BASE-TX
   B) 1000BASE-SX
   C) 1000BASE-LX10
   D) 1000BASE-T

26. Users report problems connecting to a host. The host is configured with a personal firewall that blocks incoming ICMP packets. The host is on the same IP subnet as your computer. What tool can you use to test whether the host is connected to the network?
   A) ipconfig
   B) arping
   C) netstat
   D) ping

27. Which of the address types sends data to all systems on a subnet or network instead of single hosts?
   A) Multicast
   B) Unicast
   C) Broadcast
   D) Anycast

28. Which device simplifies network client configuration?
   A) SNMP agent
   B) Switch
   C) Media converter
   D) DHCP server

29. What is the role of an Interior Gateway Protocol (IGP) in a network infrastructure?
   A) To provide updates to static routes
   B) To transfer routing information between Internet gateway routers
   C) To exchange routing information between autonomous networks
   D) To manage packets sent by a source routing application

30. HDMI cables also have the ability to carry digital audio signals. (True or False)
   A) True
   B) False

31. Which of the following protocols is responsible for network addressing?
   A) IP
   B) HTTP
   C) SSH
   D) TCP

32. Your manager asks you to procure a cable with a Type A connector on one end, and a Type B connector on the other. What kind of interface are you most likely to be dealing with?
   A) FireWire
   B) USB
   C) RJ-11
   D) Fiber-optic

33. Which of the following is a configurable client identification setting used to differentiate one WLAN from another?
   A) SID
   B) WEP
   C) SSID
   D) Wireless channel

34. What is the fastest and easiest way to "lightly" secure a wireless network?
   A) Set up WPA
   B) Turn down the power of the wireless transmitter
   C) Hide the SSID
   D) Install an authentication server on the network

35. Which of the following topology types offers the greatest amount of redundancy?
   A) Star
   B) Bus
   C) Ring
   D) Mesh

36. What is the purpose of a Dynamic Host Configuration Protocol (DHCP) server?
   A) To assign host IP addresses and configuration settings
   B) To divide a subnet into virtual local area networks (VLANs)
   C) To regenerate and amplify the data signal for selected protocols
   D) To control traffic into and out of a network for selected protocols

37. Which Transmission Control Protocol/Internet Protocol (TCP/IP) protocol is used to transfer e-mail messages and attachments between mail servers?
    A) POP3
    B) SNMP
    C) TFTP
    D) SMTP

38. Which protocol in the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite is responsible for reporting errors and providing information about packet delivery?
    A) ARP
    B) ICMP
    C) UDP
    D) IGMP

39. Which protocol uses Transmission Control Protocol (TCP) Port 21?
    A) File Transfer Protocol (FTP)
    B) Secure File Transfer Protocol (SFTP)
    C) Simple Network Management Protocol (SNMP)
    D) Secure Shell (SSH)

40. You have been called in to replace a faulty ST connector. Which of the following media types are you working with?
    A) RG-58
    B) RG-62
    C) Single-mode fiber
    D) SCSI

41. STP cable is least susceptible to electronic snooping. (True or False)
    A) True
    B) False

42. You have intermittent connectivity to www.bpa.org and want to check connectivity to the server over several hours. Which command should you use?
    A) ping -t
    B) nslookup
    C) ipconfig
    D) ping –l

43. You are installing a 100BaseFX network and you need to purchase connectors. Which of the following might you purchase?
   A) RJ-45
   B) ST
   C) SC
   D) Both B and C

44. Which feature of Windows XP permits DHCP clients to automatically self-configure an IP address and subnet mask when their DHCP server cannot be found?
   A) DNS
   B) WINS
   C) ipconfig
   D) APIPA

45. Two computers on the same network with the same IP Address will crash the entire network. (True or False)
   A) True
   B) False