BUSINESS
PROFESSIONALS
of AMERICA
Giving Purpose to Potential

Computer Network Technology

(300)

REGIONAL 2025

CONCEPT KNOWLEDGE:

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

Test Time: 60 minutes

Multiple Choice Questions
Directions: Identify the letter of the choice that best completes the statement or answers the question.

1. Which of the following is a valid IPv4 address?
   A. 192.168.1.1
   B. 169.266.0.1
   C. 1234:5678:9abc
   D. fe80::1

2. What does DHCP stand for?
   A. Domain Hosting Control Protocol
   B. Dynamic Host Configuration Protocol
   C. Digital Handshake Control Point
   D. Data Hosting Configuration Point

3. Which of the following is a cloud service model?
   A. Internet Protocol Suite
   B. Infrastructure as a Service
   C. File Transfer Protocol
   D. Ethernet Protocol

4. In networking, what does VLAN stand for?
   A. Virtual Local Area Network
   B. Very Large Area Network
   C. Virtual Long-range Access Network
   D. Visual LAN

5. Which tool is commonly used for network diagnostics and troubleshooting?
   A. Notepad
   B. Task Manager
   C. Command Prompt
   D. Control Panel

6. Which IP address is a loopback address in IPv4?
   A. 169.254.0.1
   B. 192.168.1.1
   C. 127.0.0.1
   D. 10.0.0.1

7. What is one of the purposes of a proxy server in a network?
   A. To secure a wireless connection
   B. To translate data between networks
   C. To limit access to specific resources
   D. To authenticate user credentials

8. What is the layer responsible for routing in the OSI model?
   A. Data Link
   B. Network
   C. Transport
   D. Application

9. Which protocol is commonly used for assigning IP addresses automatically in a network?
   A. FTP
   B. SNMP
   C. DHCP
   D. HTTP

10. What type of device is responsible for connecting multiple devices within a local area network at the OSI model's layer 2?
    A. Modem
    B. Hub
    C. Switch
    D. Router

11. Which protocol is used to translate domain names to IP addresses on the internet?
    A. DHCP
    B. FTP
    C. DNS
    D. SMTP

12. What technology allows multiple virtual servers to run on a single physical server?
    A. Hypervisor
    B. VPN
    C. Firewall
    D. Proxy

13. What is the purpose of a WINS server in a Windows network environment?
    A. Assigning IP addresses
    B. Resolving NetBIOS names to IP addresses
    C. Assigning domain names
    D. Resolving DNS names

14. Which protocol is commonly used for secure remote access to a network?
    A. FTP
    B. Telnet
    C. SSH
    D. SMTP

15. What is the function of a network adapter in a computer system?
    A. Connects to the internet
    B. Stores data files
    C. Connects the computer to a network
    D. Manages software applications

16. In TCP/IP subnetting, how many bits are used for the network portion in a Class C address?
    A. 8 bits
    B. 16 bits
    C. 24 bits
    D. 32 bits

17. Which protocol is commonly used for email transmission on the internet?
    A. FTP
    B. SMTP
    C. DHCP
    D. SNMP

18. What is the main function of a firewall in a network?
    A. Assign IP addresses
    B. Block unauthorized access
    C. Translate domain names
    D. Provide email services

19. What is the general purpose of a proxy server in a network environment?
    A. Block websites
    B. Monitor network traffic
    C. Speed up internet access
    D. Act as an intermediary server

20. Which layer of the OSI model is responsible for establishing, maintaining, and terminating connections?
    A. Network
    B. Transport
    C. Session
    D. Data Link

21. Which protocol is used for secure communication over the internet?
    A. FTP
    B. HTTP
    C. HTTPS
    D. SNMP

22. How does IPv6 address allocation differ from IPv4?
    A. IPv6 has 48-bit addresses
    B. IPv6 uses DHCP for address assignment
    C. IPv6 has a larger address space
    D. IPv6 supports only static addressing

23. What is the purpose of a DHCP server in a network?
    A. Resolve domain names
    B. Assign IP addresses dynamically
    C. Translate IP addresses
    D. Block malicious traffic

24. What type of network device operates at the Data Link layer of the OSI model?
    A. Router
    B. Switch
    C. Firewall
    D. Proxy

25. Which protocol is commonly used for remotely accessing and managing network devices?
    A. FTP
    B. SSH
    C. DNS
    D. HTTP

26. In TCP/IP routing, what is the function of a router?
    A. Connects devices within a LAN
    B. Filters network traffic
    C. Determines the best path for data packets
    D. Translates domain names to IP addresses

27. What is the purpose of a DNS server in a network?
    A. Assigning IP addresses
    B. Resolving domain names to IP addresses
    C. Blocking malicious websites
    D. Handling email transmission

28. How does a hub differ from a switch in a network?
    A. Hub operates at the Data Link layer
    B. Switch forwards data based on IP addresses
    C. Hub connects multiple LANs
    D. Hub broadcasts data to all devices

29. In IPv6, what does the "::" notation represent in an address?
    A. A broadcast address
    B. A compressed sequence of zeros
    C. A loopback address
    D. A multicast address

30. Which technology allows users to securely access a private network from a remote location?
    A. VPN
    B. Cloud
    C. Proxy
    D. Firewall

31. What is the purpose of network cabling in a computer network?
    A. Block malicious traffic
    B. Provide wireless connectivity
    C. Establish physical connections between devices
    D. Manage network protocols

32. Which feature does IPv6 support that IPv4 does not natively support?
    A. Anycast addressing
    B. NAT (Network Address Translation)
    C. Broadcast addressing
    D. Public-private key encryption

33. How many bits are in an IPv4 address?
    A. 32 bits
    B. 64 bits
    C. 128 bits
    D. 256 bits

34. Which protocol is used for transferring files between a client and a server on a network?
    A. SSH
    B. FTP
    C. HTTP
    D. SMTP

35. What is the primary reason for the development of IPv6?
    A. Improved security
    B. Simplified addressing
    C. Exhaustion of IPv4 addresses
    D. Faster data transfer speeds

36. What does the *ipconfig* command do in Windows operating systems?
    A. It displays the current network configuration and IP address of the device.
    B. It pings a remote host to check connectivity.
    C. It displays the routing table of the device.
    D. It monitors network traffic and connections.

37. What is the primary function of a network protocol analyzer tool?
    A. Assign IP addresses
    B. Monitor and analyze network traffic
    C. Translate domain names
    D. Manage email services

38. What is the primary purpose of a network proxy server?
    A. Block websites
    B. Monitor and filter network traffic
    C. Assign domain names
    D. Provide email services

39. Which protocol is commonly used for secure communication between a client and a server over the internet?
    A. FTP
    B. HTTP
    C. HTTPS
    D. SMTP

40. How does a network proxy server help improve network performance?
    A. Encrypts data transmissions
    B. Speeds up internet access
    C. Filters and caches web content
    D. Assigns IP addresses dynamically

41. How does a network firewall protect against cyber threats?
    A. Assigns IP addresses
    B. Blocks unauthorized access
    C. Translates domain names
    D. Provides email services

42. In networking, what does the abbreviation "UTP" stand for?
    A. Universal Transmission Protocol
    B. Unified Transport Platform
    C. Unshielded Twisted Pair
    D. Underground Telecommunication Pathway

43. Which type of network cable is used to connect similar devices, such as two switches, directly?
    A. Crossover cable
    B. Straight-through cable
    C. Serial cable
    D. Console cable

44. Which record type in DNS is used to map a domain name to an IP address?
    A. A record
    B. MX record
    C. CNAME record
    D. TXT record

45. Which networking component is used to block unauthorized access while permitting outward communication?
    A. Firewall
    B. Hub
    C. Switch
    D. Proxy

46. What utility is commonly used to troubleshoot network connectivity issues by sending packets and analyzing responses?
    A. Ping
    B. TraceRoute
    C. NSLookup
    D. Netstat

47. What is one of the main advantages of using virtual machines?
    A. Enhanced resource utilization and isolation
    B. Simplified network infrastructure
    C. Filtering network traffic
    D. Limited scalability

48. Which of the following is a client-side operating system?
    A. Windows 11
    B. Windows Server 2019
    C. Red Hat Enterprise Linux
    D. Cisco IOS

49. What is the purpose of a directory service in a network?
    A. Centralized management of network resources
    B. Secure network traffic
    C. Monitor network performance
    D. Troubleshoot network issues

50. What layer of the OSI model is responsible for data transmission between nodes on a local area network?
    A. Data Link
    B. Network
    C. Transport
    D. Application