

## Chapter 5: Network Protocols Review Questions

Book Title: Guide to Networking Essentials

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## Chapter Review

### Review Questions

1. An IPv6 address is made up of how many bits?
  - a. 32
  - b. 48
  - c. 64
  - ☒ d. 128
  - e. 256
2. Which Application-layer protocol provides remote access to a Windows computer via a GUI?
  - a. Telnet
  - ☒ b. RDP
  - c. SSH
  - d. FTP
3. If a protocol is routable, at which TCP/IP layer does it operate?
  - a. Network access
  - ☒ b. Internetwork
  - c. Transport
  - d. Application
4. Which Application-layer protocol is used to monitor and manage network devices, and what Transport-layer protocol does it use?
  - a. SMTP, UDP

b. SNMP, TCP

c. SMTP, TCP

☒ d. SNMP, UDP

5. Which TCP/IP model layer takes a large chunk of data from the Application layer and breaks it into smaller segments?

a. Network access

b. Internetwork

☒ c. Transport

d. Application

6. Which of the following protocols resolves logical addresses to physical addresses?

a. DHCP

b. TCP

c. IP

d. DNS

☒ e. ARP

7. Which of the following protocols provides connectionless service? (Choose all that apply.)

☒ a. IP

☒ b. UDP

c. TCP

d. HTTP

8. If you want to design an Application-layer protocol that provides fast, efficient communication and doesn't work with large amounts of data, what Transport-layer protocol would you design it to use?

a. IP

☒ b. UDP

c. TCP

d. HTTP

9. Which of the following is the term for identifying packets used by TCP to establish a connection?

a. Port number indicators

b. Multiwindow agreement

☒ c. Three-way handshake

d. Sequencing establishment

10. What element of a DHCP server uses the client MAC address to ensure that the client is leased the same address each time it requests an IP address?

a. IP address scope

b. Address exclusion

☒ c. Reservation

d. ARP mapping

11. Which of the following is the first packet sent when a computer wants to lease a new IP address?

a. DHCPACK

☒ b. DHCPDiscover

c. DHCPRequest

d. DHCPOffer

12. Which of the following IPv6 features is an enhancement to IPv4? (Choose all that apply.)

☒ a. Larger address space

b. Works at the Internetwork and Transport layers

☒ c. Built-in security

d. Connectionless communication

13. Which protocol can configure a computer's IP address and subnet mask automatically?

- a. TCP
- b. IP
- c. ARP
- d. DNS

☒ e. DHCP

14. What type of packets are transmitted between a DHCP client and server when a client is initially leasing an IP address?

- ☒ a. Broadcast
- b. Multicast
  - c. Unicast
  - d. Anycast

15. Which of the following accurately describes the .edu in the FQDN [www.yc.edu](http://www.yc.edu)?

- a. Fully qualified domain name
- ☒ b. Top-level domain
- c. Root domain
- d. Second-level domain

16. What's another name for a DNS client?

- a. Alias
- b. Reservation
- c. DDNS
- ☒ d. Resolver

17. What type of resource record is an alias for another record?

- a. MX

b. AAAA

☒ c. CNAME

d. PTR

18. When a Windows computer is configured to use DHCP but no DHCP server is available, what type of address is configured automatically for it?

a. PAT

☒ b. APIPA

c. NAT

d. Static

19. Where does a DNS server look when it can't resolve a query from its zone records or cache?

☒ a. Root hints

b. Alternate server

c. Top-level domain

d. BIND

20. What does the Transport layer use to identify source and destination Application-layer protocols?

a. Checksum

b. TCP address

☒ c. Port number

d. Root hints

21. Which of the following Application-layer protocols typically uses the UDP Transport-layer protocol? (Choose all that apply.)

a. HTTP

☒ b. DNS

☒ c. DHCP

d. FTP

22. Which is the correct order of headers, from left to right, in a completed frame?

- a. Frame, TCP, IP
- b. UDP, frame, IP
- c. TCP, IP, frame
- ☒ d. Frame, IP, UDP

23. Which of the following is a task performed by the Network access layer?

(Choose all that apply.)

- ☒ a. Verifies that incoming frames have the correct destination MAC address
- b. Defines and verifies IP addresses
- ☒ c. Transmits and receives bit signals
- d. Resolves MAC addresses by using IP addresses
- e. Delivers packets efficiently

24. What field of the IP header does the `tracert` program use to get the IP address of routers in the path?

- a. Version
- ☒ b. TTL
- c. Checksum
- d. Protocol

25. Which of the following is *not* found in a connectionless Transport-layer protocol? (Choose all that apply.)

- ☒ a. Three-way handshake
- b. Port numbers
- c. Checksum
- ☒ d. Acknowledgments

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