

Network+ Guide to Networks, Seventh Edition

Chapter 3, Solutions

Review Questions

1. Which protocol's header would a Layer 4 device read and process?

- A. IP
- B. TCP
- C. ARP
- D. HTTP

Answer: B. TCP

2. What number does a host use to identify the application involved in a transmission?

- A. IP address
- B. MAC address
- C. Port number
- D. Sequence number

Answer: C. Port number

3. What field in a TCP segment is used to determine if an arriving data unit exactly matches the data unit sent by the source?

- A. Source port
- B. Acknowledgment number
- C. Data
- D. Checksum

Answer: D. Checksum

4. At which OSI layer does IP operate?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Data Link layer

Answer: C. Network layer

5. Which OSI layer is responsible for directing data from one LAN to another?

- A. Transport layer
- B. Network layer
- C. Data Link layer
- D. Physical layer

Answer: B. Network layer

6. What kind of route is created when a network administrator configures a router to use a specific path between nodes?

- A. Trace route
- B. Static route
- C. Default route
- D. Best path

Answer: B. Static route

7. When a router can't determine a path to a message's destination, where does it send the message?

- A. Default gateway
- B. Default route
- C. Gateway of last resort
- D. Routing table

Answer: C. Gateway of last resort

8. A routing protocol's reliability and priority are rated by what measurement?

- A. Routing table
- B. MTU
- C. Latency
- D. AD

Answer: D. AD

9. Which routing protocol does an exterior router use to collect data to build its routing tables?

- A. RIPv2
- B. BGP
- C. OSPF
- D. IS-IS

Answer: B. BGP

10. When messages to a remote Web server are being lost for no apparent reason and you suspect the problem might be a path MTU black hole, which TCP/IP utility can you use to diagnose the problem?

- A. netstat
- B. traceroute
- C. nbtstat
- D. ping

Answer: D. ping

11. What three characteristics distinguish TCP from UDP?

Answer: TCP is connection-oriented, uses sequencing and checksums, and provides flow control.

12. What process is used to establish a TCP connection?

Answer: Three-way handshake

13. Which two protocols are essential to IPv4 networks, but whose functions are performed by ICMPv6 on IPv6 networks?

Answer: IGMP, ARP

14. What is the difference between dynamic ARP table entries and static ARP table entries?

Answer: Dynamic ARP table entries are created when a client makes an ARP request, whereas static ARP table entries are entered manually using the ARP utility.

15. What four functions do all routers perform?

Answer: 1. Connect dissimilar networks. 2. Interpret Layers 3 and 4 addressing and other information. 3. Determine the best path for data to follow. 4. Reroute traffic if a primary path is down but another path is available.

16. What database does a router consult before determining the most efficient path for delivering a message?

Answer: Its routing table

17. Manually modifying a routing table can cause messages to get stuck hopping between a limited number of routers. What is this problem called?

Answer: Routing loop

18. Give three examples of routing metrics used by routers to determine the best of various available routing paths.

Answer: (Any three) Hop count, theoretical bandwidth, actual throughput, path latency (or delay), path load, MTU, cost, reliability

19. What kind of Web site allows you to remotely collect network routing information back to your actual location?

Answer: Looking glass site

20. List three interior gateway protocols (IGPs).

Answer: RIP/RIPv2, IS-IS, OSPF