1. Which networking device operates at the physical layer of the OSI model to regenerate incoming electrical signals?

a) Router
b) Bridge
c) Repeater
d) Gateway

Answer: c) Repeater
Explanation: Repeaters are used to regenerate incoming electrical signals to extend the length of a network segment. They operate at the physical layer of the OSI model.

2. What is the primary function of a bridge in a network?

a) Connect networks with different protocols
b) Filter and forward traffic based on MAC addresses
c) Translate between different network layer protocols
d) Determine the best path for data packets

Answer: b) Filter and forward traffic based on MAC addresses
Explanation: Bridges operate at the data link layer of the OSI model and filter and forward traffic based on MAC addresses.

3. Which networking device is used to connect networks with different communication protocols?

a) Repeater
b) Switch

c) Gateway
d) Router

Answer: c) Gateway
Explanation: Gateways are used to connect networks with different communication protocols by translating between them.

4. What type of routing algorithm uses hop count as the metric for path selection?

a) Distance vector routing
b) Link state routing
c) Adaptive routing
d) Static routing

Answer: a) Distance vector routing
Explanation: Distance vector routing algorithms use hop count, which represents the number of routers a packet must pass through to reach its destination, as the metric for path selection.

5. Which protocol suite is commonly used for communication over the Internet?

a) OSI
b) IPX/SPX
c) TCP/IP
d) NetBEUI

Answer: c) TCP/IP
Explanation: TCP/IP (Transmission Control Protocol/Internet Protocol) is the protocol suite

commonly used for communication over the Internet.

6. What layer of the OSI model does TCP/IP operate at?

a) Application layer
b) Transport layer
c) Network layer
d) Data link layer

Answer: b) Transport layer
Explanation: TCP/IP operates at the transport layer of the OSI model.

7. Which TCP/IP protocol is responsible for resolving hostnames to IP addresses?

a) HTTP
b) DNS
c) FTP
d) DHCP

Answer: b) DNS
Explanation: DNS (Domain Name System) is responsible for resolving hostnames to IP addresses in the TCP/IP protocol suite.

8. Which TCP/IP protocol provides reliable, connection-oriented communication between devices?

a) UDP
b) TCP

c) ICMP
d) ARP

Answer: b) TCP
Explanation: TCP (Transmission Control Protocol) provides reliable, connection-oriented communication between devices in the TCP/IP protocol suite.

9. What is the purpose of ARP (Address Resolution Protocol) in TCP/IP?

a) To resolve domain names to IP addresses
b) To map MAC addresses to IP addresses
c) To establish a connection between client and server
d) To determine the best path for data packets

Answer: b) To map MAC addresses to IP addresses
Explanation: ARP is used to map MAC addresses to IP addresses in a local network.

10. Which TCP/IP protocol is responsible for diagnosing network connectivity issues and reporting errors?

a) TCP
b) ICMP
c) DNS
d) DHCP

Answer: b) ICMP
Explanation: ICMP (Internet Control Message Protocol) is responsible for diagnosing network connectivity issues and reporting errors in the TCP/IP protocol suite.