Introduction to Internet Architecture and Protocols

Computer Networks · Answer Key · 30 Questions

1. What is a computer network?

A) A system of interconnected computers that can share resources and data.
B) A single computer with internet access.
C) A group of routers and switches.
D) A wired communication channel.

2. Which of the following are components of a computer network?

A) Nodes and Links
B) Servers and Clients
C) Routers and Switches
D) Wired and Wireless channels.

3. What does LAN stand for?

A) Local Area Network
B) Large Area Network
C) Logical Access Network
D) Limited Access Network.

4. Which of the following is NOT a benefit of computer networks?

A) Increased hardware costs
B) Resource sharing
C) Communication
D) Access to remote data.

5. How is data transferred across the internet according to the basic working principle?

A) Data is broken into packets, sent, and reassembled.
B) Data is sent as a continuous stream.
C) Data is encrypted and then sent.
D) Data is transferred directly from source to destination.

6. How many layers are in the OSI Model?

A) 7
B) 4
C) 5
D) 3.

7. How many layers are in the TCP/IP Model?

A) 4
B) 7
C) 5
D) 3.

8. Which layer in the TCP/IP model provides network services directly to applications?

A) Application Layer
B) Transport Layer
C) Internet Layer
D) Link Layer.

9. Which protocol is responsible for ensuring reliable data transfer in the TCP/IP model?

A) TCP
B) UDP
C) IP
D) HTTP.

10. What is the primary function of the Internet Layer in the TCP/IP model?

A) Packet routing across networks
B) Providing network services to applications
C) Ensuring reliable end-to-end communication
D) Physical transmission of data.

11. Which layer in the TCP/IP model deals with the physical transmission of data between devices on the same network?

A) Link Layer
B) Application Layer
C) Transport Layer
D) Internet Layer.

12. Which devices are typically responsible for the Internet Layer in the TCP/IP model?

A) Routers
B) Servers
C) PCs
D) Modems.

13. What protocol is used for domain name resolution in the TCP/IP suite?

A) DNS
B) HTTP
C) FTP
D) SMTP.

14. During TCP/IP data transfer, what happens at the Transport Layer?

A) Segmentation and sequencing via TCP/UDP
B) Packet routing
C) Framing and transmission
D) Data generation.

15. What is the purpose of the 'ping' command?

A) To show round-trip time of packets and confirm connectivity.
B) To transfer files between computers.
C) To send emails.
D) To browse websites.

16. What is a network protocol?

A) A set of rules and conventions for communication between network devices.
B) A physical cable connecting devices.
C) A type of network hardware.
D) A software application.

17. Which of the following is an example of a communication protocol?

A) TCP
B) HTTP
C) DNS
D) FTP.

18. TCP is described as being:

A) Connection-Oriented
B) Connectionless
C) Stateless
D) Unreliable.

19. UDP is described as being:

A) Connectionless
B) Connection-Oriented
C) Reliable
D) Flow Controlled.

20. Which protocol is primarily used for transferring web pages?

A) HTTP
B) FTP
C) SMTP
D) DNS.

21. Which protocol is used for transferring files over a network?

A) FTP
B) HTTP
C) SMTP
D) ICMP.

22. Which protocol is used for sending email between servers?

A) SMTP
B) HTTP
C) FTP
D) DNS.

23. Which protocol is used for error messages and diagnostics?

A) ICMP
B) TCP
C) UDP
D) HTTP.

24. What is a key characteristic of TCP compared to UDP?

A) Reliability
B) Speed
C) Lower overhead
D) Connectionless operation.

25. What is a key characteristic of UDP compared to TCP?

A) Speed
B) Reliability
C) Connection-oriented operation
D) Flow control.

26. HTTP uses which transport layer protocol for reliable data transfer?

A) TCP
B) UDP
C) IP
D) ARP.

27. FTP uses separate channels for which two functions?

A) Commands and file transfer

B) Sending and receiving

C) User authentication and data encryption

D) Request and response.

28. What is a common use case for DNS?

A) Resolving domain names to IP addresses

B) Sending email

C) Transferring files

D) Browsing websites.

29. Which protocol operates at the network layer in the TCP/IP model and is used for diagnostics like Ping?

A) ICMP

B) TCP

C) UDP

D) HTTP.

30. How does Dropbox utilize the TCP/IP layers for its functionality?

A) Uses TCP for reliable file transfers and sync accuracy.

B) Relies on UDP for all data transfers.

C) Only uses the Application Layer for all operations.

D) Primarily uses the Link Layer for data creation.