Name of the Bundle	Proficient Bundle V1	Subject	Networking V1
Topic	Switching Techniques	Last updated on	11 July 2025

Multiple Choice Questions on Switching Techniques:

1. What is the primary purpose of a switching technique in a network?

   A. Compress data

   B. Increase network speed

   C. Decide the best route for data transmission

   D. Encrypt the data

   Answer: C. Decide the best route for data transmission

   Explanation: Switching techniques determine the most efficient path between sender and receiver, especially when multiple routes exist in a network.

2. Switching techniques are primarily used to_____.

   A. Enhance multimedia quality

   B. Establish one-to-one communication between systems

   C. Broadcast signals to all devices

   D. Convert analog signals to digital

   Answer: B. Establish one-to-one communication between systems

   Explanation: Switching allows direct communication paths to be set up between two devices, ensuring effective point-to-point data transfer.

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3. Which of the following is NOT a type of switching technique?

   A. Circuit Switching

   B. Packet Switching

   C. Message Switching

   D. Signal Switching

   Answer: D. Signal Switching

   Explanation: Circuit, packet, and message switching are standard switching techniques. "Signal Switching" is not recognized in this context.

4. In which switching technique is a dedicated path established for the entire duration of communication?

   A. Packet Switching

   B. Circuit Switching

   C. Message Switching

   D. Hybrid Switching

   Answer: B. Circuit Switching

   Explanation: Circuit switching sets up a dedicated communication path that remains reserved for the entire session.

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5. Packet switching breaks data into_____.

   A. Frequencies

   B. Symbols

   C. Fixed-length frames

   D. Packets

   Answer: D. Packets

   Explanation: Packet switching divides data into smaller units called packets, which can travel independently through the network.

6. Which switching technique is most efficient for data transmission over the internet?

   A. Circuit Switching

   B. Message Switching

   C. Packet Switching

   D. Manual Switching

   Answer: C. Packet Switching

   Explanation: The Internet uses packet switching because it efficiently handles variable traffic and shares network resources.

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7. Why is packet switching preferred in large networks?

   A. Requires dedicated bandwidth

   B. Ensures faster delivery by using a fixed path

   C. Optimizes network usage and handles high traffic efficiently

   D. Always uses the shortest path

   Answer: C. Optimizes network usage and handles high traffic efficiently

   Explanation: Packet switching dynamically routes packets through available paths, making better use of network resources.

8. Which switching technique is more efficient for bursty data traffic?

   A. Packet Switching

   B. Circuit Switching

   C. Manual Switching

   D. Hybrid Switching

   Answer: A. Packet Switching

   Explanation: Packet switching is better for bursty data like emails or web browsing, where data is sent intermittently.

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9. In which switching method do all data packets follow the same path?

   A. Packet Switching

   B. Circuit Switching

   C. Message Switching

   D. Both A and B

   Answer: B. Circuit Switching

   Explanation: In circuit switching, all data travels along a pre-established path.

10. Which of the following is a disadvantage of packet switching?

    A. Dedicated path is always reserved

    B. Inefficient for data communication

    C. Packets may arrive out of order

    D. Wastes bandwidth during silence

    Answer: C. Packets may arrive out of order

    Explanation: In packet switching, packets can take different routes and may not arrive in sequence.

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11. Which switching technique is primarily used in traditional telephone networks?

A. Packet Switching

B. Circuit Switching

C. Message Switching

D. Digital Switching

Answer: B. Circuit Switching

Explanation: Traditional voice calls in PSTN (Public Switched Telephone Network) use circuit switching.

12. Packet switching is used in which of the following networks?

A. PSTN

B. Internet

C. Telegraph

D. Cable TV

Answer: B. Internet

Explanation: The Internet primarily uses packet switching for efficient and flexible data transmission.

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13. Which switching technique suffers from bandwidth waste during periods of silence?

A. Packet Switching

B. Circuit Switching

C. Message Switching

D. None of the above

Answer: B. Circuit Switching

Explanation: In circuit switching, the channel is reserved even if no data is being transmitted.

14. What happens to a message in packet switching?

A. It is sent as a single unit

B. It is split into packets and sent independently

C. It is sent over a fixed circuit

D. It is broadcast to all devices

Answer: B. It is split into packets and sent independently

Explanation: Packet switching divides the message into small units called packets that can take different routes.

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15. Which technique provides better fault tolerance and reliability?

A. Circuit Switching

B. Packet Switching

C. Manual Switching

D. Static Switching

Answer: B. Packet Switching

Explanation: If a link fails in packet switching, packets can be rerouted through different paths, increasing fault tolerance.

16. Which of the following is an example of a circuit-switched network?

A. Internet

B. Wireless LAN

C. Telephone network

D. Satellite TV

Answer: C. Telephone network

Explanation: Traditional telephone systems use circuit switching to maintain a dedicated line between callers.

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17. How many phases does circuit switching involve?

A. 2

B. 3

C. 4

D. 5

Answer: B. 3

Explanation: Circuit switching has three phases: establishment, data transfer, and disconnection.

18. What happens in the circuit establishment phase?

A. Data is transmitted

B. Packets are created

C. A dedicated path is set up between sender and receiver

D. The message is queued

Answer: C. A dedicated path is set up between sender and receiver

Explanation: The first phase creates the communication circuit for the session.

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19. What occurs during the circuit disconnect phase?

A. Data is transmitted

B. The circuit is closed and resources are released

C. Another path is established

D. Packets are reordered

Answer: B. The circuit is closed and resources are released

Explanation: After communication ends, the dedicated path is torn down and network resources are freed.

20. Which is true about the data transfer phase in circuit switching?

A. Data is stored and forwarded

B. All data takes different paths

C. Data is transmitted over a dedicated channel

D. Data is delayed for queuing

Answer: C. Data is transmitted over a dedicated channel

Explanation: Once the circuit is established, data flows directly through the reserved path.

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21. Why is circuit switching suitable for voice communication?

A. It can handle large files

B. It is packet-based

C. It provides consistent, real-time connection

D. It's delay-tolerant

Answer: C. It provides consistent, real-time connection

Explanation: Real-time voice calls benefit from the constant bandwidth and delay-free transmission of a dedicated path.

22. What happens to data before it is transmitted in packet switching?

A. It is transmitted as a single block

B. It is converted into analog signals

C. It is divided into small packets

D. It is sent through a fixed path

Answer: C. It is divided into small packets

Explanation: In packet switching, data is split into small packets for independent transmission.

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23. How are packets typically sent in a packet-switched network?

A. All take the same route

B. All follow a dedicated circuit

C. Each packet may take a different route

D. All are sent simultaneously on separate networks

Answer: C. Each packet may take a different route

Explanation: Packets can travel through various routes based on availability and network conditions.

24. What happens to the packets at the destination in a packet-switched network?

A. They are ignored

B. They are discarded

C. They are reassembled into the original message

D. They are compressed again

Answer: C. They are reassembled into the original message

Explanation: Once all packets arrive, they are put back in the correct order to recreate the original data.

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25. Which of the following is an example of packet switching?

A. Making a phone call

B. Sending a fax

C. Sending an email

D. Watching analog TV

Answer: C. Sending an email

Explanation: Email is transmitted over the internet using packet switching.

26. Which type of communication best uses packet switching?

A. Real-time voice over landline

B. File transfer over the internet

C. Traditional circuit-based calling

D. Morse code messaging

Answer: B. File transfer over the internet

Explanation: Packet switching is optimal for non-real-time data like file transfers or web browsing.

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27. Why is packet switching used for internet communication?

A. It simplifies wiring

B. It provides fixed bandwidth

C. It's scalable and efficient for large networks

D. It guarantees the fastest speed

Answer: C. It's scalable and efficient for large networks

Explanation: Packet switching supports many users and adapts to changing network traffic conditions.

28. Which protocol commonly used in the Internet relies on packet switching?

A. FTP

B. TCP/IP

C. SMTP

D. HTTP

Answer: B. TCP/IP

Explanation: TCP/IP is the foundational protocol suite of the internet and operates using packet switching.

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29. Which switching technique is commonly used in the traditional telephone network?

A. Circuit Switching

B. Packet Switching

C. Message Switching

D. Frame Switching

Answer: A. Circuit Switching

Explanation: Traditional telephony uses circuit switching.

30. Which phase is NOT part of the circuit switching process?

A. Circuit establishment

B. Data transfer

C. Packet reassembly

D. Circuit disconnect

Answer: C. Packet reassembly

Explanation: Packet reassembly is part of packet switching, not circuit switching.

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31. What is an advantage of packet switching over circuit switching?

A. Dedicated path reserved

B. More efficient bandwidth usage

C. Zero delay in transmission

D. No packet loss

Answer: B. More efficient bandwidth usage

Explanation: Packet switching shares network resources dynamically.

32. Which of the following is a disadvantage of circuit switching?

A. High latency

B. Inefficient use of bandwidth during idle times

C. Packets may arrive out of order

D. Complex packet routing

Answer: B. Inefficient use of bandwidth during idle times

Explanation: The dedicated path remains reserved even if no data is sent.

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33. Packet switching is best suited for which type of data traffic?

A. Continuous, real-time voice communication

B. Bursty, non-real-time data like emails

C. Analog telephone signals

D. Broadcasting TV signals

Answer: B. Bursty, non-real-time data like emails

Explanation: Packet switching efficiently handles intermittent data.

34. What happens to data packets if a route fails in a packet-switched network?

A. Communication stops immediately

B. Packets are rerouted through other available paths

C. Packets are discarded permanently

D. Packets wait until the original route is restored

Answer: B. Packets are rerouted through other available paths

Explanation: Packet switching supports dynamic routing for fault tolerance.