Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 1%. We keep your latest score.

Next item →

1. Which Switching Fabric type allows multiple data transfers simultaneously? 1 / 1 point

- ○ Bus Switching
- ○ Cut-Through Switching
- ◉ Crossbar Switching
- ○ Shared Memory Switching

Correct
Crossbar switching fabric allows multiple data transfers to occur simultaneously because it has a dedicated path between input and output ports using a matrix-like switch design. This reduces contention and increases throughput, making it highly efficient for high-speed networks.

2. What is a major advantage of Link-State Routing over Distance Vector Routing? 1 / 1 point

- ○ Requires less memory and processing power
- ○ Uses less bandwidth
- ○ Does not require any routing updates
- ◉ Provides faster convergence and more accurate routing decisions

Correct
Link-State Routing (e.g., OSPF, IS-IS) provides faster convergence because routers have a complete view of the network topology and make more informed routing decisions. Unlike Distance Vector Routing (e.g., RIP), which relies on periodic updates and hop counts, Link-State Routing propagates only topology changes, reducing convergence time and improving routing accuracy.

3. What is the primary function of the OSPF "Hello" packet? 1 / 1 point

- ○ To request routing updates
- ○ To advertise routes
- ○ To forward data packets
- ◉ To establish and maintain neighbour relationships

Correct
OSPF (Open Shortest Path First) uses Hello packets to establish and maintain neighbor relationships between routers. These packets are sent periodically to discover OSPF neighbors, check their status, and ensure the adjacency remains active. If a router stops receiving Hello packets from a neighbor, it assumes the neighbor is down and updates its topology accordingly.

4. Which of the following is a multicast IP address range? 1 / 1 point

- ◉ 224.0.0.0/4
- ○ 192.168.0.0/16
- ○ 10.0.0.0/8
- ○ 172.16.0.0/12

Correct
The 224.0.0.0/4 range (224.0.0.0 to 239.255.255.255) is reserved for multicast communication in IPv4. Multicast allows one sender to transmit data to multiple recipients efficiently, which is commonly used in applications like video streaming and network discovery.

5. Which of the following is a key advantage of SDN? 1 / 1 point

- ○ Tight integration between hardware and software
- ○ Increased hardware dependency
- ○ Static, non-programmable networks
- ◉ Centralised network management and programmability

Correct
One of the key advantages of Software-Defined Networking (SDN) is centralised network management and programmability. In SDN, the control plane is separated from the data plane, allowing network administrators to dynamically configure and manage network devices through software-based controllers. This enables more efficient traffic management, automation, and scalability.

6. Which of the following is a major challenge in multimedia transmission over IP networks? 1 / 1 point

- ○ The inability to use wireless networks
- ○ IP address exhaustion
- ◉ Network congestion and packet loss
- ○ The need for physical cabling

Correct
Multimedia transmission over IP networks, such as voice and video streaming, requires low latency, minimal packet loss, and consistent bandwidth. Network congestion and packet loss can significantly degrade quality, causing buffering, delays, or jitter.

7. In digitising audio, what does the sampling rate refer to? 1 / 1 point

- ○ The number of bits per sample
- ○ The number of channels in an audio file
- ○ The total size of the audio file
- ◉ The number of times the audio signal is measured per second

Correct
The sampling rate in audio digitisation refers to how many times per second an analog audio signal is measured and converted into digital form. It is measured in Hertz (Hz) or kilohertz (kHz). For example, 44.1 kHz means the audio is sampled 44,100 times per second. A higher sampling rate generally results in better audio quality but increases file size.

8. Which field in the RTP header helps synchronise multiple media streams? 1 / 1 point

- ○ Payload Type
- ◉ Timestamp
- ○ Source Identifier (SSRC)
- ○ Sequence Number

Correct
The Timestamp field in the RTP header is used to synchronise multiple media streams, such as audio and video, by providing a common reference for playback timing. It helps in maintaining lip-sync between audio and video and compensates for network delays. The timestamp value increases based on the media's sampling rate, ensuring smooth playback.

9. Which of the following is NOT a type of RTCP packet? 1 / 1 point

- ○ Receiver Report (RR)
- ○ Goodbye (BYE)
- ○ Sender Report (SR)
- ◉ Handshake Acknowledgment (HA)

Correct
There is no RTCP packet type called "Handshake Acknowledgment (HA)." RTCP (Real-Time Control Protocol) is used to provide quality feedback and synchronisation for RTP (Real-Time Transport Protocol) streams. RTCP does not handle handshake acknowledgments, which are typically found in transport-layer protocols like TCP.

10. Which SIP message is used to initiate a session? 1 / 1 point

- ○ BYE
- ○ CANCEL
- ◉ INVITE
- ○ REGISTER

Correct
The INVITE message in SIP is used to initiate a session by inviting a user to participate in a voice or video call. It contains details such as the caller's identity, the media type (e.g., audio or video), and codec preferences.