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Question: 1

Access-layer devices are required to provide access for a large number of information terminals on both telecom networks and campus networks. Access-layer devices use various technologies. Huawei's broadband "access network" devices refer to the copper line access devices that mainly use the xDSL technology and the optical access devices that mainly use the PON technology.

- A. TRUE
- B. FALSE

Answer: A

Explanation:

Huawei's broadband access network devices are designed to support multiple technologies for providing connectivity to end users. These devices primarily include:

Copper Line Access Devices : These devices use xDSL (Digital Subscriber Line) technology, which is widely used for broadband access over traditional telephone lines. Examples include ADSL, VDSL, and G.fast.

Optical Access Devices : These devices use PON (Passive Optical Network) technology, which is a fiber-optic-

based access technology. GPON (Gigabit Passive Optical Network) and XGS-PON (10-Gigabit Symmetric Passive Optical Network) are examples of PON technologies.

The statement aligns perfectly with the HCIA Huawei ACCESS documentation, which emphasizes the role of access-layer devices in supporting both copper and fiber-based technologies.

Reference:

HCIA Huawei ACCESS Official Documentation , Chapter: Access Technologies Overview.
GPON and xDSL Technology Whitepaper by Huawei.

Question: 2

The GPON technology is integrated with the () to provide terminal devices that meet various application scenarios.

- A. xDSL
- B. Ethernet
- C. WLAN
- D. VoIP technology

Answer: D

Explanation:

GPON (Gigabit Passive Optical Network) is a fiber-optic access technology that integrates seamlessly with VoIP (Voice over IP) technology to provide voice services alongside data and video services. This integration allows GPON to support triple-play services (voice, data, and video) over a single fiber infrastructure.

xDSL : Refers to copper-based technologies and is not directly integrated with GPON.

Ethernet : While GPON uses Ethernet frames for data transmission, it is not the primary integration point for application scenarios.

WLAN : Wireless LAN is a separate technology and not directly integrated with GPON.

VoIP : Voice over IP is a key application scenario for GPON, enabling high-quality voice services over fiber-optic networks.

This is explicitly mentioned in the HCIA Huawei ACCESS documentation, which highlights the role of GPON in delivering converged services, including VoIP.

Reference:

HCIA Huawei ACCESS Official Documentation , Chapter: GPON Technology and Applications.

Triple-Play Services in GPON Networks by Huawei.

Question: 3

Which of the following protocols works at the transport layer and is connectionless-oriented?

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

Answer: C

Explanation:

The transport layer in the OSI model is responsible for end-to-end communication and includes two main protocols: TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) .

IP (Internet Protocol) : Works at the network layer and is responsible for routing packets across networks.

ARP (Address Resolution Protocol) : Works at the network layer and maps IP addresses to MAC addresses.

TCP : A connection-oriented protocol at the transport layer that ensures reliable communication through acknowledgments and retransmissions.

UDP : A connectionless-oriented protocol at the transport layer that provides faster but less reliable communication compared to TCP.

Since the question specifies a connectionless-oriented protocol at the transport layer, the correct answer is UDP .

Reference:

HCIA Huawei ACCESS Official Documentation , Chapter: Transport Layer Protocols.

TCP/IP Protocol Suite Overview by Huawei.

Question: 4

Which of the following statements about IP routes are correct?

- A. In a LAN, a route consists of the following parts: IP address and MAC address.
- B. IP routes are used to guide IP packet forwarding.
- C. Routing is a concept at the second layer of the OSI model.
- D. Any route must contain the following information: source address, destination address, and next hop.

Answer: B

Explanation:

Let us analyze each option:

Option A : Incorrect. A route does not include MAC addresses. It typically consists of a destination network, subnet mask, next-hop address, and outgoing interface.

Option B : Correct. IP routes are essential for guiding the forwarding of IP packets from the source to the destination. Routers use routing tables to determine the best path for packet delivery.

Option C : Incorrect. Routing is a concept at the network layer (Layer 3) of the OSI model, not the data link layer (Layer 2).

Option D : Incorrect. A route does not require the source address. It only needs the destination network, subnet mask, and next-hop information.

Thus, the correct answer is B .

Reference:

HCIA Huawei ACCESS Official Documentation , Chapter: IP Routing Basics.

Routing Fundamentals in IP Networks by Huawei.

Question: 5

The routing table of a router contains the following two entries:

Destination/Mask Protocol Pre Cost Nexthop Interface

9.0.0.0/8 OSPF 10 50 1.1.1.1 Serial0

9.1.0.0/16 RIP 100 5 2.2.2.2 Ethernet0

If the router needs to forward packets with the destination address of 9.1.4.5, which of the following statements is correct?

- A. The router selects the first route, because the priority of OSPF is higher.
- B. The router selects the second route, because this route matches the destination address 9.1.4.5 more accurately.
- C. The router selects the second route, because the metric of RIP is smaller.
- D. The router selects the second route, because the outbound interface is Ethernet0, which is faster than Serial0.

Answer: B

Explanation:

When a router forwards packets, it selects the route with the longest prefix match (most specific route) for the destination address.

First Route : Matches 9.0.0.0/8, which covers all IP addresses starting with 9.

Second Route : Matches 9.1.0.0/16, which is more specific and covers IP addresses starting with 9.1.

For the destination address 9.1.4.5 , the second route (9.1.0.0/16) is a better match because it is more specific than the first route (9.0.0.0/8).

Option A : Incorrect. OSPF has a higher priority, but the longest prefix match takes precedence over priority.

Option B : Correct. The second route matches the destination address more accurately.

Option C : Incorrect. Metric is not considered when comparing routes with different prefix lengths.

Option D : Incorrect. Interface speed is irrelevant in route selection.

Reference:

HCIA Huawei ACCESS Official Documentation , Chapter: IP Routing Table Selection.
Routing Principles and Longest Prefix Match by Huawei.