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MODULE : 9 Infrastructure services

1. Enable secret [password] is hashed using the _____ algorithm.
A. MD5
B. AH
C. PSK
D. ESP
E. WPA2

Ans:
A. MD5
The enable secret [password] is hashed using the **MD5** algorithm, which is a cryptographic hashing method used in Cisco devices for securely storing passwords.

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2. An engineer connects to Router R1 and issues a show ip ospf neighbor command. The status of neighbor 2.2.2.2 lists FULL/BDR. What does the BDR mean?
A. R1 is an Area Border Router.
B. R1 is a backup designated router.
C. Router 2.2.2.2 is an Area Border Router.
D. Router 2.2.2.2 is a backup designated router.

Ans:

D. Router 2.2.2.2 is a backup designated router.
The BDR (Backup Designated Router) ensures network stability by taking over as the Designated Router (DR) if the current DR fails. The status FULL/BDR indicates that Router 2.2.2.2 is fully adjacent and functioning as a Backup Designated Router.

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3. Which command is used to view the neighbor discovery table on a PC?
A. show ipv6 neighbor
B. show ipv6 neighbors
C. netsh interface ipv6 show neighbor
D. netsh interface ipv6 show neighbors

Ans:

B. show ipv6 neighbors
The **show ipv6 neighbors** command displays the IPv6 neighbor discovery table, which contains information about neighboring devices, including their link-layer addresses and state.

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4. What type of variable is being shown? Routers = [R1, R2, R3]
A. List
B. Dictionary
C. Simple
D. Unsigned integers

Ans:

A. List
A **List** is an ordered collection of elements enclosed in square brackets. In this case, the list contains the elements R1, R2, and R3.

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5. Identify the fields in an IPv4 header. (Choose three)
A. Host component
B. Time to Live
C. Source address
D. Destination address
E. Network

Ans:

B. Time to Live
C. Source address
D. Destination address
The IPv4 header includes several key fields, such as:

- **Time to Live (TTL):** Limits the lifespan of the packet to prevent infinite looping.
- **Source Address:** Indicates the IP address of the sender.
- **Destination Address:** Indicates the IP address of the recipient.

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6. Host A and Host B sit in two different subnets. The path between the subnets of these two hosts runs through three different Layer 3 forwarding devices (routers and Layer 3 switches). A network engineer uses the APIC-EM Path Trace ACL Analysis tool to analyze the path used for Host A to send packets to Host B. Which part of the function is done specifically by the ACL Analysis or ACL Trace part of the tool?
A. Discovery of the topology that exists between the two hosts
B. Analysis of the Layer 3 forwarding decisions in the path from Host A to B
C. Analysis of the Layer 2 forwarding decisions in the path from Host A to B
D. Analysis of the impact of ACLs on the packets that would flow from Host A to B

Ans:
D. Analysis of the impact of ACLs on the packets that would flow from Host A to B
The ACL Analysis or ACL Trace part of the tool evaluates how access control lists (ACLs) affect the data packets' flow between Host A and Host B.

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7. Which IPv6 address is the equivalent of the IPv4 interface loopback address 127.0.0.1?
A. ::1
B. ::
C. 2000::/3
D. 0::/10

Ans:
A. ::1
In IPv6, the address `::1` is the loopback address equivalent to the IPv4 address 127.0.0.1.

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8. Which command is used to apply an ACL to an interface?
A. access-group
B. ip access-group
C. ip access-list
D. ip access-class
E. access-class
F. access-list

Ans:
B. ip access-group
The `ip access-group` command is used to apply an ACL to an interface in a Cisco device.

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9. Which command and mode will successfully configure a hostname of R1 on a Cisco IOS router?
A. Router(config)#name R1
B. Router# hostname R1
C. Router(config)#hostname R1
D. Router#name R1
E. Router>hostname R1
F. Router>name R1

Answer:
C. Router(config)#hostname R1
The command `hostname R1` is used in global configuration mode to configure a hostname on a Cisco IOS router.

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10. Which of the following reserved IPv4 addresses has binary 0s in all of the host bit positions?
A. Local broadcast address
B. Loopback address
C. Directed broadcast address
D. Network address
E. All zeros address

Ans:
D. Network address
A network address in IPv4 has all host bits set to 0, representing the entire network rather than a specific host.