

CCNA 200-301 Exam Questions

Helps you master the fundamentals of networking, including network devices, basic topologies, and communication concepts. These questions are designed to strengthen your understanding of core CCNA topics and prepare you effectively for the Cisco CCNA 200-301 exam.

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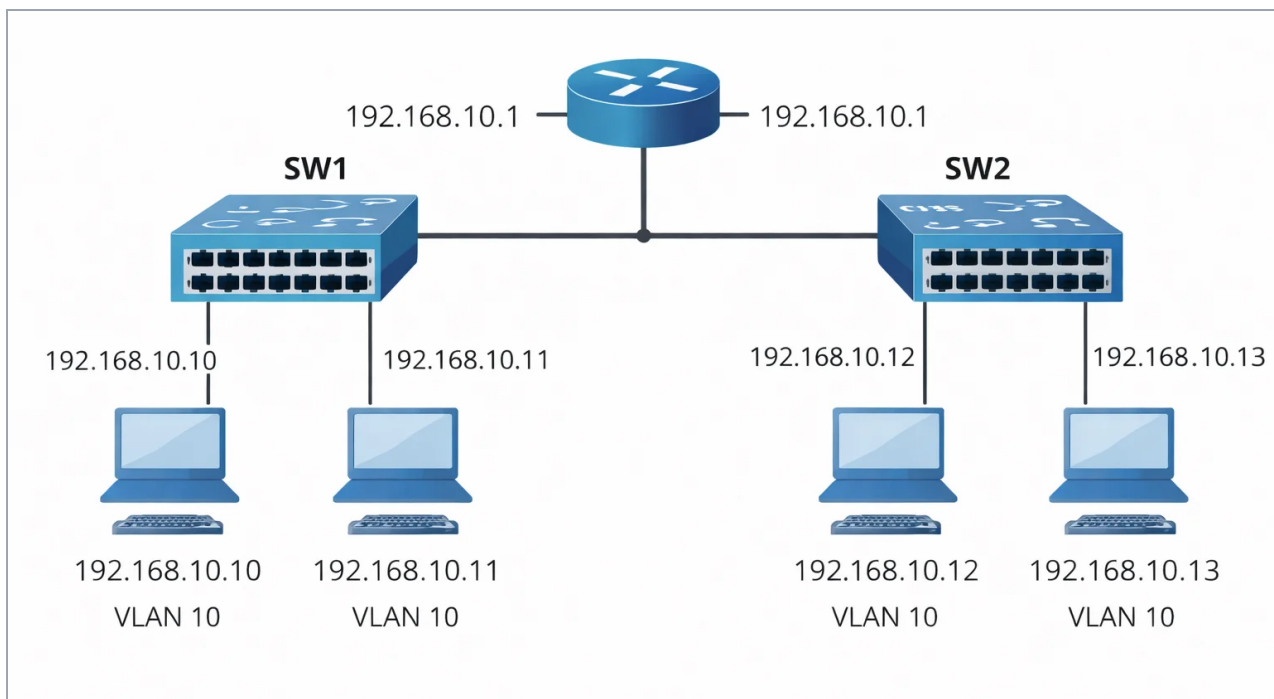
1. What technique can be used to route IPv6 traffic over an IPv4 infrastructure?

☐ A. NAT☒ B. 6 to 4 tunneling☐ C. L2TPv3☐ D. dual-stack

✓ Correct !

Overlay tunneling encapsulates IPv6 packets in IPv4 packets for delivery over IPv4 infrastructure (core network). Using overlay tunnels, you can communicate with isolated IPv6 networks without upgrading the IPv4 infrastructure between them.

2. According to the picture, a network technician is asked to design a small redundant network. The image shows this design where all computers are configured in the same VLAN. What conclusions can be drawn about this design?



- ☐ A. This design will work as intended.
- ☐ B. Spanning-trees will need to be used.
- ☒ C. The router will not accept the addressing scheme.
- ☐ D. The connection between the switches must be a circuit.

✓ **Correct !**

Each interface on a router must be on a different network. If there are two interfaces on the same network, the router will not accept it and will show an error when the administrator assigns it.

3. Which statement is correct for the command `ip route 172.16.3.0 255.255.255.0 192.168.2.4`? (Choose two.)

- ☒ A. It establishes a static route to the 172.16.3.0 network.
- ☐ B. It establishes a static route to the 192.168.2.0 network.

- ☐ C. It configures the router to send any traffic for an unknown destination to the 172.16.3.0 network.
- ☐ D. It configures the router to send any traffic for an unknown destination out the interface with the address 192.168.2.4.

☒ E. It uses the default administrative distance.

✔ Correct !

The target network is the 172.16.3.0 prefix subnet. The 192.168.2.0 network is a transit hop to reach the static route destination. Since no metrics are set, the default administrative distance (1) will be used.

4. What is the advantage of private IPv4 IP addresses? (Choose two.)

- ☐ A. They are routed the same as public IP addresses.
- ☒ B. They are less costly than public IP addresses.
- ☒ C. They can be assigned to devices without Internet connections.
- ☐ D. They eliminate the necessity for NAT policies.
- ☐ E. They eliminate duplicate IP conflicts.

✔ Correct !

Private IP addresses are free as they are used in the internal network. You do not pay for using a private IP address. Since private IP addresses are used in the internal network, devices on the same network can communicate with each other without the internet.

5. What are the advantages of the UDP protocol for application traffic? (Choose two.)

☒ A. UDP traffic has lower overhead than TCP traffic

☐ B. UDP provides a built-in recovery mechanism to retransmit lost packets

☐ C. The CTL field in the UDP packet header enables a three-way handshake to establish the connection

☐ D. UDP maintains the connection state to provide more stable connections than TCP

☒ E. The application can use checksums to verify the integrity of application data

✔ **Correct !**

UDP traffic has a lower overhead than TCP traffic and the Application can use checksums to verify the integrity of application data.

6. Which WAN access technology is preferable for a small office architecture?

☒ A. broadband cable access

☐ B. frame-relay packet switching

☐ C. dedicated point-to-point leased line

☐ D. Integrated Services Digital Network switching

✔ **Correct !**

Broadband connection is preferred for WAN access in small offices. Broadband connections are often used to connect small offices and telecommunications workers to a corporate site over the Internet.

7. In WAN architecture, which helps a business's scalability and reliability for the network? (Choose two.)

☐ A. asynchronous routing

☐ B. single-homed branches

☒ C. dual-homed branches

☐ D. static routing

☒ E. dynamic routing

✔ Correct !

Multiple ports are used in WAN architecture to secure connections and prevent interruption. In addition, when one of the connections is broken, dynamic routing is done to ensure that the connection continues from the other branch.

8. What is the binary representation of a unique ipv6 local address?

☐ A. 0

☒ B. 11111100

☐ C. 11111111

☐ D. 11111101

✔ Correct !

IPv6 Unique Local Address is an IPv6 address in block FC00::/7; this means IPv6 Unique Local addresses start with 7 bits 1111110 -> binary 11111100 is the leading prefix for Unique Local.

9. What are the reasons for using an IPv4 private IP domain? (Choose two.)

☒ A. to enable intra-enterprise communication

☐ B. to implement NAT

☐ C. to connect applications

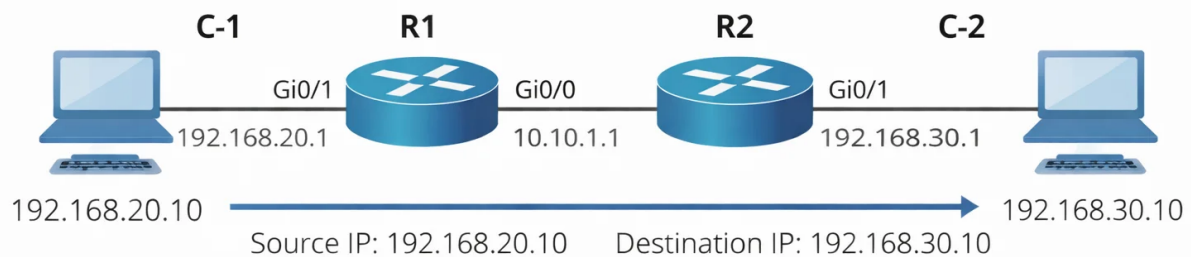
☒ D. to conserve global address space

☐ E. to manage routing overhead

✔ Correct !

Private IP provides ease of use for the company. It can be used for Internet traffic inside the same environment. Private IP is used to conserve the public address space.

10. According to the picture, when C-1 sends a packet to C-2, what source and destination IP address does it have when the packet reaches the Gi0/0 interface on router R2?



- ☐ A. source is 192.168.10.10 and destination is 10.10.2.2
- ☐ B. source 192.168.20.10 and destination 192.168.30.1
- ☒ C. source is 192.168.20.10 and destination is 192.168.30.10
- ☐ D. source 10.10.1.1 and destination 10.10.2.2

✓ **Correct !**

The source and destination IP addresses of the packets do not change along the entire path. Only the source and destination MAC addresses are changed.

11. What features do Copper and Fiber SFP modules have in common?

- ☐ A. They support an inline optical attenuator to increase signal strength
- ☐ B. They contain single-mode and multi-mode in a single module

☒ C. They provide minimal disruption to services as they are hotswappable.

☐ D. They offer reliable bandwidth of up to 100 Mbps in half duplex mode

✔ **Correct !**

The Hot-Swap-Component can be removed or installed without powering down the device.

12. What are server functions? (Choose two.)

☒ A. handles simultaneous requests from multiple workstations

☐ B. provides redundancy using only virtual server clustering

☐ C. hosted in a data center dedicated to a single customer only

☐ D. runs the same operating system to communicate with other servers

☒ E. runs applications that send and receive data for the requesting workstations

✔ **Correct !**

The server can handle requests from more than one computer at the same time, it can process the one installed on it and respond to incoming requests.

13. What function is performed by the collapsed core layer in a two-tier architecture?

☒ A. enforcement of routing policies

☐ B. flag interesting traffic for data policies

☐ C. implementation of security policies

☐ D. adding users to the edge of the network

✔ **Correct !**

'collapsed core' is the implementation of the distribution (routing) layer and core layer functions by a single device. The primary motivation of the collapsed core design is to reduce the cost of the network while retaining many of the benefits of the three-tier hierarchical model.

14. What is the primary function of the Layer 3 device?

☐ A. to transmit wireless traffic between hosts

☐ B. to analyze traffic and leave unauthorized traffic from internet

☐ C. to forward traffic within the same broadcast domain

☒ D. to forward traffic between different networks

✔ **Correct !**

Forwarding a layer 3 device is to forward between different networks.

15. What function is performed by the core layer in a Layer-3 architecture? (Choose two.)

☒ A. Provide uninterrupted forwarding service

☐ B. Examine packages for malicious activity

☒ C. Ensure timely data transfer between tiers

☐ D. Provide direct connectivity for end-user devices

☐ E. Police traffic sent to the end of the network

✔ **Correct !**

Core layer is responsible for transporting large volumes of traffic quickly, provides inter-connection between distribution layer devices and ensures timely data transfer.

16. What is the recommended approach to avoid co-channel congestion when installing access points using the 2.4 GHz frequency?

☒ A. Using different non-overlapping channels

☐ B. Using an overlapping channel

☐ C. using a non-overlapping channel

☐ D. Using different overlapping channels

✔ **Correct !**

It runs each AP on one channel. At the same time, the purpose of neighborhood APs is to use non-overlapping channels (1,6,11) to avoid co-channel congestion.

17. A manager asks a network engineer to recommend a cloud service model that employees can access without spending time installing, managing, and updating software that is used only occasionally. What cloud service model can the engineer recommend?

☐ A. infrastructure as a service

☐ B. platform as a service

☐ C. business process as a service to support different types of services

☒ D. software as a service

✔ **Correct !**

Software as a Service (SaaS) is a cloud-based method of providing software to users. Users subscribe to an app instead of purchasing and installing it. The actual application runs on cloud servers.

18. What is the function of the layer 2 switch? (Choose two.)

☐ A. Acts as a central point for association and authentication servers

☐ B. Selects the best route between networks on the WAN

☒ C. carries packets in a VLAN

☐ D. moves packets between different VLANs

☐ E. makes routing decisions based on a packets MAC address

☒ F. (Carries packets in a VLAN) – correct function

✔ **Correct !**

A Layer 2 switch operates at the data link layer (OSI Layer 2) and uses the MAC Address to determine the path. It carries packets in a VLAN and uses hardware-based switching.

19. A network technician examines the wireless network, noting high usage on 2.4GHz channels and lower usage on 5GHz channels. What should be configured to allow clients to preferably use 5GHz access points?

☒ A. Client Band Select

☐ B. Re-Anchor Roamed Clients

☐ C. OEAP Split Tunnel

☐ D. 11ac MU-MIMO

✓ **Correct !**

Band Select is Cisco's terminology for Band Steering. When enabled, it promotes stations to the 5 GHz band by suppressing 2.4 GHz probe responses and first sending 5 GHz probe responses.

20. What network function takes place in the data plane?

☐ A. processing inbound SSH management traffic

☐ B. sending and receiving OSPF Hello packets

☐ C. facilitates spanning-tree elections

☒ D. forwarding remote client/server traffic

✓ **Correct !**

Network devices operate on two planes; data plane and control plane. The data plane transmits traffic flows (forwarding remote client/server traffic).

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The 200-301, also known as the Cisco Certified Network Associate (CCNA), covers a wide range of topics. Because Cisco pulls from a broad pool of subjects, it's important to have a solid grasp of the material. Some topics may also require hands-on experience, but with dedication and the right preparation, success is within reach.

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Some certifications require knowledge from earlier exams, while others use multiple tests to assess your skills. If the 200-301 feels overwhelming at first, that's okay. You might benefit from starting with a more foundational exam to build confidence and clarity.

Review the Exam Objectives

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