Dumpsgate CCNA 200-301 Practice Questions

55 original questions, 4 CLI exhibit questions, answers with explanations, a quick reference, and 5 mini-labs. Every item is tagged for CCNA v1.1 and v2.0.

How to use this workbook

- Take questions 1 to 55 in one timed sitting of 55 minutes. No notes, and no going back to earlier questions, because the real Cisco exam does not allow it.
- Take the 4 exhibit questions with 20 minutes on the clock. Read the CLI output before the question.
- Mark your answers, then score each domain with the tracker in Part 4.
- Fix every weak domain in a lab (mini-labs included) before retesting with questions you have not seen.

What the version tags mean

Tag	Meaning
v1.1 and v2.0	Core topic on the current exam and on v2.0
v2.0 new topic	Added or raised to a troubleshooting level in v2.0 (exam from February 3, 2027)
v1.1 and v2.0 (expanded in v2.0)	On both blueprints, with deeper coverage in v2.0

Coverage by v1.1 domain

v1.1 domain	Blueprint weight	Questions
Network Fundamentals	20%	9
Network Access	20%	9
IP Connectivity	25%	12
IP Services	10%	10
Security Fundamentals	15%	8
Automation and Programmability (incl. v2.0 AI topics)	10%	7

Exam facts (October 2026): 200-301 CCNA v1.1 is a 120-minute exam priced at US$300, graded pass/fail, with results online within 48 hours. Cisco publishes no passing score, question count, or pass rate. CCNA v2.0 replaces v1.1 in February 2027 under the same exam code. Sources: cisco.com CCNA exam pages and the Cisco Learning Network.

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Part 1. Practice questions 1 to 55

1. How many usable host addresses does a /27 IPv4 subnet provide?

Network Fundamentals | v1.1 and v2.0

A. 14
B. 30
C. 32
D. 62

2. Which subnet contains the host 172.16.45.200/20?

Network Fundamentals | v1.1 and v2.0

A. 172.16.0.0/20
B. 172.16.40.0/20
C. 172.16.45.0/20
D. 172.16.32.0/20

3. What is the RFC 5952 recommended form of 2001:0DB8:0000:0000:00A0:0000:0000:0001?

Network Fundamentals | v1.1 and v2.0

A. 2001:db8::a0:0:0:1
B. 2001:db8::a0::1
C. 2001:db8:0:0:a0::1
D. 2001:db8::a:0:0:1

4. A router learns 10.10.10.0/24 from OSPF and also has a static route to 10.10.10.0/24 configured with administrative distance 120. Which route enters the routing table?

IP Connectivity | v1.1 and v2.0

A. The static route, because static routes always win
B. Both routes, with equal-cost load balancing
C. The OSPF route, because 110 is lower than 120
D. Neither, because of the conflict

5. A router has routes to 10.0.0.0/8, 10.1.0.0/16, 10.1.1.0/24, and 0.0.0.0/0. Which route forwards a packet to 10.1.2.5?

IP Connectivity | v1.1 and v2.0

A. 10.0.0.0/8
B. 10.1.1.0/24
C. 10.1.0.0/16
D. 0.0.0.0/0

6. Two OSPF routers on the same subnet stay in the EXSTART/EXCHANGE state. What is the most likely cause?

IP Connectivity | v1.1 and v2.0

A. Mismatched interface MTU
B. Mismatched hello timers
C. Mismatched area IDs
D. Duplicate router IDs on different subnets

7. Three OSPF routers boot at the same time on one Ethernet segment. R1: priority 0, router ID 9.9.9.9. R2: priority 1, router ID 2.2.2.2. R3: priority 1, router ID 3.3.3.3. Which router becomes the DR?

IP Connectivity | v1.1 and v2.0

A. R1
B. R3
C. R2
D. No DR is elected

8. Both ends of a switch-to-switch link are configured with switchport mode dynamic auto. What is the result?

Network Access | v1.1 and v2.0

A. An 802.1Q trunk forms
B. An ISL trunk forms
C. The ports go err-disabled
D. The link operates as an access link

9. An access port has PortFast and BPDU Guard enabled. Someone connects a switch that sends BPDUs. What happens?

Network Access | v1.1 and v2.0

A. The port becomes the root port
B. The port moves to the blocking state
C. BPDUs are filtered and the port keeps forwarding
D. The port goes err-disabled

10. Which wildcard mask matches every host in 192.168.10.0/26 in an ACL?

Security Fundamentals | v1.1 and v2.0

A. 0.0.0.31
B. 0.0.0.63
C. 0.0.0.64
D. 255.255.255.192

11. A switch port has switchport port-security enabled with no other port-security commands. What happens when a second MAC address appears on the port?

Security Fundamentals | v1.1 and v2.0

A. The frame is dropped silently (protect)
B. The frame is dropped and a log is generated (restrict)
C. The port goes err-disabled (shutdown)
D. The new MAC replaces the old one

12. A syslog message is logged at severity level 4. Which severity name does that correspond to?

IP Services | v1.1 and v2.0

A. Warnings
B. Errors
C. Notifications
D. Informational

13. A user can ping 8.8.8.8 but cannot open www.example.com in a browser. Which test isolates the fault fastest?

IP Services / Network Services | v2.0 new topic

A. nslookup www.example.com
B. ping the default gateway
C. show mac address-table on the access switch
D. traceroute 8.8.8.8

14. Which statement about Ansible is correct?

Automation / AI and Network Operations | v1.1 and v2.0 (expanded in v2.0)

A. It requires an agent installed on each network device
B. It is a pull-based tool where devices fetch configurations on a schedule
C. It only works with Cisco controllers
D. It uses YAML playbooks and connects agentlessly, typically over SSH

15. An engineer wants a public generative AI tool to explain errors in a router running-config. What should happen before the config is pasted?

AI and Network Operations | v2.0 new topic

A. Nothing, because configs contain no sensitive data
B. Remove or mask passwords, keys, SNMP communities, and public addressing per the data classification policy
C. Convert the config to JSON
D. Paste only the first 20 lines

16. A Windows client shows the address 169.254.33.10 with no default gateway. What does this indicate?

IP Services / Network Services | v2.0 new topic

A. The DHCP server assigned a link-local scope
B. The client uses SLAAC
C. The client did not receive a DHCP offer and self-assigned an APIPA address
D. The DNS server is down

17. On an IOS DHCP server, which command stops the server from leasing the gateway address 10.1.1.1?

IP Services / Network Services | v2.0 new topic

A. ip dhcp pool EXCLUDE
B. ip dhcp excluded-address 10.1.1.1
C. default-router 10.1.1.1
D. no ip dhcp conflict logging

18. Clients in VLAN 20 must reach a DHCP server in another subnet. Where is ip helper-address configured?

IP Services | v1.1 and v2.0

A. On the DHCP server
B. On every access port in VLAN 20
C. On the router interface facing the DHCP server
D. On the Layer 3 interface or SVI that serves VLAN 20

19. Which HTTP method does a REST API client use to retrieve data without changing it?

Automation and Programmability | v1.1 and v2.0

A. GET
B. POST
C. PUT
D. DELETE

20. Which of these is valid JSON?

Automation and Programmability | v1.1 and v2.0

A. {'hostname': 'R1'}
B. {hostname: "R1"}
C. {"hostname": "R1", "ports": 24}
D. {"hostname" = "R1"}

21. In a controller-based architecture, which interface does the controller use to program network devices?

Automation and Programmability | v1.1 and v2.0

A. Northbound interface
B. Eastbound interface
C. Southbound interface
D. Management plane console

22. Which pair of LACP modes forms an EtherChannel?

Network Access | v1.1 and v2.0

A. active and passive
B. passive and passive
C. desirable and passive
D. on and active

23. Which switch becomes the STP root bridge? SW-A: 32769, 0000.1111.aaaa. SW-B: 24577, 0000.9999.ffff. SW-C: 32769, 0000.0000.0001.

Network Access | v1.1 and v2.0

A. SW-A
B. SW-B
C. SW-C
D. No root until priorities match

24. Which subinterface command assigns router-on-a-stick traffic to VLAN 10?

Network Access | v1.1 and v2.0

A. switchport access vlan 10
B. vlan 10
C. encapsulation isl 10
D. encapsulation dot1Q 10

25. A switch receives a unicast frame whose destination MAC is not in its MAC address table. What does it do?

Network Access | v1.1 and v2.0

A. Drops the frame
B. Sends it to the default gateway
C. Sends an ARP request
D. Floods it out all ports in the same VLAN except the ingress port

26. Which discovery protocol is vendor-neutral and defined by IEEE 802.1AB?

Network Access | v1.1 and v2.0

A. CDP
B. LLDP
C. DTP
D. VTP

27. Which 2.4 GHz channels are non-overlapping in North America?

Network Access | v1.1 and v2.0

A. 1, 5, 9
B. 2, 7, 12
C. 1, 6, 11
D. 1, 7, 13

28. Which authentication method does WPA3-Personal use instead of the WPA2 pre-shared key handshake?

Security Fundamentals | v1.1 and v2.0

A. SAE
B. TKIP
C. WEP
D. LEAP

29. Which IEEE standard is known as PoE+ and supplies up to 30 W per port from the switch?

Switching and Network Access | v2.0 new topic

A. 802.3at
B. 802.3af
C. 802.3bt
D. 802.1X

30. Which switch feature limits broadcast traffic on a port to a set threshold?

Network Services and Security | v2.0 new topic

A. Port security
B. DHCP snooping
C. Root guard
D. Storm control

31. With DHCP snooping enabled, which port should be configured as trusted?

Security Fundamentals | v1.1 and v2.0

A. Every access port
B. The uplink toward the legitimate DHCP server
C. Ports connected to wireless clients
D. No ports

32. Dynamic ARP Inspection validates ARP packets against which data source by default?

Security Fundamentals | v1.1 and v2.0

A. The MAC address table
B. The routing table
C. The DHCP snooping binding table
D. The CDP neighbor table

33. Which statement correctly compares TACACS+ and RADIUS?

Security Fundamentals | v1.1 and v2.0

A. RADIUS encrypts the entire payload
B. TACACS+ uses TCP 49 and encrypts the entire payload
C. TACACS+ uses UDP 1812
D. Both combine authentication and authorization in one process

34. Which SNMP version and security level provide both authentication and encryption?

IP Services | v1.1 and v2.0

A. SNMPv2c with a community string
B. SNMPv3 noAuthNoPriv
C. SNMPv3 authNoPriv
D. SNMPv3 authPriv

35. A router named R1 has a local user and VTY lines configured. Which command is still required before crypto key generate rsa works?

Security Fundamentals | v1.1 and v2.0

A. ip domain-name example.com
B. ip ssh version 2
C. transport input ssh
D. service password-encryption

36. In NAT terminology, what is the inside global address?

IP Services | v1.1 and v2.0

A. The private address assigned to an inside host
B. The address of an outside host as seen from inside
C. The public address that represents an inside host to outside networks
D. The router's loopback address

37. Which keyword turns dynamic NAT into PAT so many hosts share one public address?

IP Services | v1.1 and v2.0

A. extendable
B. pool
C. overload
D. static

38. With the default OSPF reference bandwidth of 100 Mbps, what is the cost of a 10 Mbps Ethernet interface?

IP Connectivity | v1.1 and v2.0

A. 10
B. 1
C. 100
D. 64

39. In show ip route output, what does the code L mean?

IP Connectivity | v1.1 and v2.0

A. A route learned from LSA type 1
B. A /32 local route for an address configured on the router
C. A load-balanced route
D. A route learned through LLDP

40. What IPv6 interface ID does modified EUI-64 create from MAC address 0011.2233.4455?

Network Fundamentals | v1.1 and v2.0

A. 0011:22FF:FE33:4455
B. 0211:2233:FFFE:4455
C. FE80:0011:2233:4455
D. 0211:22FF:FE33:4455

41. Which prefix identifies IPv6 link-local addresses?

Network Fundamentals | v1.1 and v2.0

A. 2000::/3
B. FC00::/7
C. FF00::/8
D. FE80::/10

42. An interface shows a rising count of late collisions. What is the most likely cause?

Network Fundamentals | v1.1 and v2.0

A. A native VLAN mismatch
B. A duplex mismatch
C. An incorrect IP address
D. STP blocking the port

43. Which protocol and port does TFTP use?

Network Fundamentals | v1.1 and v2.0

A. TCP 20
B. TCP 69
C. UDP 69
D. UDP 161

44. Which type of hypervisor runs directly on server hardware without a host operating system?

Network Fundamentals | v1.1 and v2.0

A. Type 1
B. Type 2
C. Container runtime
D. Virtual switch

45. Which cloud model gives the customer control of operating systems and virtual machines while the provider manages physical hardware?

Network Fundamentals | v1.1 and v2.0

A. IaaS
B. SaaS
C. PaaS
D. On-premises

46. Two routers run HSRP with default settings except R1 has priority 110. Which router is active?

IP Connectivity | v1.1 and v2.0

A. R2
B. The router with the higher IP address
C. Both share the active role
D. R1

47. Which DSCP value is the standard marking for voice payload traffic?

IP Services | v1.1 and v2.0

A. AF41 (34)
B. EF (46)
C. CS3 (24)
D. Default (0)

48. Which NTP stratum value indicates a device is unsynchronized?

IP Services | v1.1 and v2.0

A. 1
B. 2
C. 16
D. 15

49. Managing switches and access points through the Meraki dashboard is an example of which network management approach?

AI and Network Operations | v2.0 new topic

A. Device-based
B. Cloud-based
C. Controller-based on-premises
D. Infrastructure as code

50. An agentic AI tool proposes an OSPF configuration change during an outage. What is the safest operating practice?

AI and Network Operations | v2.0 new topic

A. Allow the agent to push changes without review
B. Disable logging so the agent runs faster
C. Reboot the routers first
D. Require human validation of the proposed change, then apply it through the normal change process

51. OSPF has no router-id command. Loopback0 is 10.0.0.1, Loopback1 is 10.0.0.9, and G0/0 is 192.168.1.1. Which router ID does OSPF choose?

IP Connectivity | v1.1 and v2.0

A. 10.0.0.9
B. 10.0.0.1
C. 192.168.1.1
D. 0.0.0.0 until configured

52. Which command creates an IPv6 default static route through next hop 2001:db8:1::1?

IP Connectivity | v1.1 and v2.0

A. ipv6 route 0.0.0.0 0.0.0.0 2001:db8:1::1
B. ip route ::/0 2001:db8:1::1
C. ipv6 route ::/0 2001:db8:1::1
D. ipv6 default-gateway 2001:db8:1::1

53. Two routers connect with OSPF network type point-to-point. How many DR/BDR elections occur on that link?

IP Connectivity | v1.1 and v2.0

A. One DR and one BDR
B. Only a DR
C. None
D. One per area

54. Which command creates an IPv4 default static route to next hop 203.0.113.1?

IP Connectivity | v1.1 and v2.0

A. ip route 0.0.0.0 0.0.0.0 203.0.113.1
B. ip route 0.0.0.0 255.255.255.255 203.0.113.1
C. ip default-network 203.0.113.1
D. ip route 203.0.113.1 0.0.0.0 0.0.0.0

55. OSPF learns two paths to 172.20.0.0/16 with identical cost. What does the router do by default?

IP Connectivity | v1.1 and v2.0

A. Installs only the path from the neighbor with the higher router ID
B. Installs both paths and load-balances across them
C. Installs neither path
D. Installs the path learned first and ignores the other

Part 2. Simulation-style CLI exhibit questions

Real CCNA items ask you to act on device output. Read the exhibit first, then the question.

Exhibit 1. Hosts in VLAN 30 on SW1 cannot reach VLAN 30 hosts on SW2. VLANs 10 and 20 work.

```
SW1# show interfaces trunk
Port      Mode   Encapsulation  Status     Native vlan
Gi0/1     on     802.1q         trunking   1

Port      Vlans allowed on trunk
Gi0/1     1,10,20
```

E1. Which command fixes the problem without breaking VLANs 10 and 20?

A. switchport trunk allowed vlan 30

B. switchport trunk allowed vlan add 30

C. switchport trunk native vlan 30

D. switchport mode dynamic desirable

Exhibit 2. This ACL is applied inbound on R1's LAN interface. Users in 192.168.10.0/24 lose DNS, ping, and email as well as web access.

```
R1# show access-lists
Extended IP access list BLOCK_WEB
    10 deny tcp 192.168.10.0 0.0.0.255 any eq www (42 matches)
    20 deny tcp 192.168.10.0 0.0.0.255 any eq 443 (17 matches)
```

E2. What is the cause?

A. The wildcard mask is wrong

B. The ACL is applied in the wrong direction

C. Every ACL ends with an implicit deny any, and no permit statement exists

D. Port 443 cannot be filtered by an extended ACL

Exhibit 3. Use R1's routing table.

```
R1# show ip route
Gateway of last resort is 203.0.113.1 to network 0.0.0.0
S*    0.0.0.0/0 [1/0] via 203.0.113.1
      10.0.0.0/8 is variably subnetted, 4 subnets, 4 masks
O        10.1.0.0/16 [110/20] via 10.0.12.2, 00:05:11, GigabitEthernet0/0
O        10.1.1.0/24 [110/30] via 10.0.13.3, 00:05:11, GigabitEthernet0/1
C        10.0.12.0/30 is directly connected, GigabitEthernet0/0
L        10.0.12.1/32 is directly connected, GigabitEthernet0/0
```

E3. Out of which interface or next hop does R1 forward a packet to 10.1.1.77?

A. GigabitEthernet0/0 toward 10.0.12.2, because metric 20 is lower

B. GigabitEthernet0/1 toward 10.0.13.3

C. The default route toward 203.0.113.1

D. It load-balances across both OSPF routes

Exhibit 4. A user replaced their PC and now has no connectivity on Fa0/5. The new PC is authorized.

```
SW1# show port-security interface Fa0/5
Port Security              : Enabled
Port Status                : Secure-shutdown
Violation Mode             : Shutdown
Maximum MAC Addresses      : 1
Total MAC Addresses        : 1
Sticky MAC Addresses       : 1
Last Source Address:Vlan   : 0050.7966.6801:10
Security Violation Count   : 1
```

E4. Which sequence restores service for the new PC?

A. Enter no shutdown on Fa0/5 only

B. Clear the old sticky MAC address, then enter shutdown and no shutdown on Fa0/5

C. Change the violation mode to protect

D. Reload the switch

Part 3. Answer key

	2. D	3. A	4. C	5. C	6. A	7. B	8. D			
	10. B	11. C	12. A	13. A	14. D	15. B	16. C			
	18. D	19. A	20. C	21. C	22. A	23. B	24. D			
	26. B	27. C	28. A	29. A	30. D	31. B	32. C			
	34. D	35. A	36. C	37. C	38. A	39. B	40. D			
	42. B	43. C	44. A	45. A	46. D	47. B	48. C			
	50. D	51. A	52. C	53. C	54. A	55. B	E1. B	E2. C	E3. B	E4.

Answers and explanations

1. Answer B: 30

A /27 leaves 5 host bits: 2^5 = 32 addresses, minus the network and broadcast addresses = 30. 32 forgets to subtract those two; 14 fits a /28 and 62 fits a /26.

2. Answer D: 172.16.32.0/20

A /20 mask is 255.255.240.0, so subnets increment by 16 in the third octet: 0, 16, 32, 48. The value 45 falls in the 32 to 47 block, so the subnet is 172.16.32.0/20 with broadcast 172.16.47.255.

3. Answer A: 2001:db8::a0:0:0:1

Two zero runs have equal length, so RFC 5952 compresses the first one. Using :: twice is invalid. 2001:db8:0:0:a0::1 is valid but not the recommended form, and a:0:0:1 drops a significant zero from 00A0.

4. Answer C: The OSPF route, because 110 is lower than 120

The lowest administrative distance wins. OSPF is 110, so the static route with AD 120 is a floating static route that installs only if the OSPF route disappears.

5. Answer C: 10.1.0.0/16

The router uses the longest prefix that matches. 10.1.2.5 is not inside 10.1.1.0/24 (10.1.1.0 to 10.1.1.255), so the longest match is 10.1.0.0/16.

6. Answer A: Mismatched interface MTU

Hello timer and area mismatches stop routers from becoming neighbors at all. An MTU mismatch lets them see each other but breaks database description exchange, which leaves them stuck in EXSTART/EXCHANGE.

7. Answer B: R3

Priority 0 makes R1 ineligible regardless of its high router ID. R2 and R3 tie on priority, so the higher router ID (3.3.3.3) wins. R2 becomes the BDR.

8. Answer D: The link operates as an access link

Dynamic auto only responds to DTP negotiation and never initiates it. With both ends waiting, no trunk forms and the link stays in access mode. At least one side must be trunk or dynamic desirable.

9. Answer D: The port goes err-disabled

BPDU Guard shuts the port down into err-disabled state when it receives any BPDU. Filtering BPDUs while forwarding describes BPDU Filter, a different feature.

10. Answer B: 0.0.0.63

A wildcard mask is the inverse of the subnet mask: 255.255.255.255 minus 255.255.255.192 = 0.0.0.63. 255.255.255.192 is the subnet mask itself, which IOS would misread as a wildcard.

11. Answer C: The port goes err-disabled (shutdown)

The default maximum is one MAC address and the default violation mode is shutdown, which err-disables the port.

12. Answer A: Warnings

Syslog levels run 0 Emergencies, 1 Alerts, 2 Critical, 3 Errors, 4 Warnings, 5 Notifications, 6 Informational, 7 Debugging. Interpreting syslog output is an explicit v2.0 skill.

13. Answer A: nslookup www.example.com

A successful ping to a public IP proves Layer 1 to Layer 3 connectivity and the default gateway. The remaining failure point is name resolution, which nslookup tests directly.

14. Answer D: It uses YAML playbooks and connects agentlessly, typically over SSH

Ansible is agentless and push-based. Playbooks are written in YAML, and network modules connect to devices over SSH or APIs. Pull-based agents describe Puppet and Chef.

15. Answer B: Remove or mask passwords, keys, SNMP communities, and public addressing per the data classification policy

Running-configs hold secrets such as enable secrets, pre-shared keys, and SNMP strings. Data classification is part of building a safe prompt in the v2.0 AI topics.

16. Answer C: The client did not receive a DHCP offer and self-assigned an APIPA address

169.254.0.0/16 is the APIPA range. A client uses it only when no DHCP server answers, so check the DHCP server, relay, and VLAN path.

17. Answer B: ip dhcp excluded-address 10.1.1.1

ip dhcp excluded-address is a global command that reserves addresses from every pool. default-router only tells clients which gateway to use.

18. Answer D: On the Layer 3 interface or SVI that serves VLAN 20

The relay agent must receive the client broadcast, so the command goes on the gateway interface for the client subnet.

19. Answer A: GET

GET reads a resource. POST creates, PUT replaces or updates, DELETE removes.

20. Answer C: {"hostname": "R1", "ports": 24}

JSON requires double quotes around keys and string values and a colon between key and value.

21. Answer C: Southbound interface

Southbound interfaces (such as NETCONF or OpenFlow) face the devices. Northbound interfaces (often REST APIs) face applications and scripts.

22. Answer A: active and passive

At least one side must be active. Passive-passive never negotiates, desirable is PAgP, and on does not negotiate with LACP.

23. Answer B: SW-B

The lowest bridge ID wins and priority is compared first. 24577 is lower than 32769, so the MAC address is never compared.

24. Answer D: encapsulation dot1Q 10

Router subinterfaces use encapsulation dot1Q <vlan-id>. switchport commands apply only to switch ports.

25. Answer D: Floods it out all ports in the same VLAN except the ingress port

Unknown unicast frames are flooded within the VLAN. Switches do not ARP for Layer 2 forwarding.

26. Answer B: LLDP

LLDP is the IEEE standard. CDP, DTP, and VTP are Cisco proprietary.

27. Answer C: 1, 6, 11

Channels 1, 6, and 11 are the standard non-overlapping set for 20 MHz channels in the 2.4 GHz band.

28. Answer A: SAE

WPA3-Personal uses Simultaneous Authentication of Equals, which resists offline dictionary attacks on the passphrase.

29. Answer A: 802.3at

802.3af supplies up to 15.4 W, 802.3at (PoE+) up to 30 W, and 802.3bt up to 60 W or 90 W. 802.1X is port authentication.

30. Answer D: Storm control

Storm control measures broadcast, multicast, or unknown unicast traffic and drops or shuts down the port when the threshold is exceeded.

31. Answer B: The uplink toward the legitimate DHCP server

Only ports leading to authorized DHCP servers should be trusted. DHCP server messages arriving on untrusted ports are dropped, which blocks rogue servers.

32. Answer C: The DHCP snooping binding table

DAI checks IP-to-MAC bindings learned by DHCP snooping. Static hosts need ARP ACLs.

33. Answer B: TACACS+ uses TCP 49 and encrypts the entire payload

TACACS+ runs over TCP 49, encrypts the whole body, and separates authentication, authorization, and accounting. RADIUS uses UDP and encrypts only the password.

34. Answer D: SNMPv3 authPriv

authPriv authenticates messages and encrypts them. SNMPv2c sends community strings in clear text.

35. Answer A: ip domain-name example.com

RSA keys are named from the hostname and domain name. The hostname is already non-default, so the domain name is the missing prerequisite.

36. Answer C: The public address that represents an inside host to outside networks

Inside local is the private address. Inside global is the translated address seen by outside networks.

37. Answer C: overload

ip nat inside source list 1 interface g0/1 overload translates many inside hosts to one address using unique ports.

38. Answer A: 10

Cost = reference bandwidth / interface bandwidth = 100 / 10 = 10. Any interface 100 Mbps or faster gets cost 1 unless the reference bandwidth is raised.

39. Answer B: A /32 local route for an address configured on the router

IOS adds an L entry with a /32 mask (or /128 for IPv6) for each interface address, next to the C entry for the connected subnet.

40. Answer D: 0211:22FF:FE33:4455

Insert FFFE in the middle and flip the seventh bit of the first byte: 00 becomes 02.

41. Answer D: FE80::/10

FE80::/10 is link-local. 2000::/3 is global unicast, FC00::/7 is unique local, and FF00::/8 is multicast.

42. Answer B: A duplex mismatch

Late collisions appear on the half-duplex side of a link whose other end runs full duplex.

43. Answer C: UDP 69

TFTP uses UDP 69. TCP 20 is FTP data and UDP 161 is SNMP.

44. Answer A: Type 1

Type 1 (bare-metal) hypervisors run on hardware. Type 2 hypervisors run as applications on a host OS.

45. Answer A: IaaS

IaaS delivers compute, storage, and networking. PaaS hides the OS and SaaS delivers a finished application.

46. Answer D: R1

Higher priority wins and the default is 100. The IP address breaks ties only when priorities match.

47. Answer B: EF (46)

Expedited Forwarding (DSCP 46) marks voice bearer traffic for low-latency queuing.

48. Answer C: 16

Stratum 16 means unsynchronized. Lower numbers sit closer to the authoritative time source.

49. Answer B: Cloud-based

The management plane is hosted in the cloud. Device-based means per-box CLI, and controller-based on-premises refers to platforms such as Catalyst Center.

50. Answer D: Require human validation of the proposed change, then apply it through the normal change process

Cisco's v2.0 topics cover evaluating AI assistant output. AI-generated changes can be wrong, so a human checks them before deployment.

51. Answer A: 10.0.0.9

Order of selection: the router-id command, then the highest IPv4 address on an up loopback, then the highest address on an up physical interface. Loopbacks beat 192.168.1.1 even though it is numerically higher.

52. Answer C: ipv6 route ::/0 2001:db8:1::1

::/0 is the IPv6 default prefix and ipv6 route is the IPv6 static route command. Mixing IPv4 syntax or the ip route command fails.

53. Answer C: None

Point-to-point links need no DR or BDR, so neighbors move straight to FULL. DR/BDR elections happen on broadcast multi-access networks such as Ethernet with the default network type.

54. Answer A: ip route 0.0.0.0 0.0.0.0 203.0.113.1

A default route matches 0.0.0.0 with mask 0.0.0.0, followed by the next hop. A mask of 255.255.255.255 would match only the single host 0.0.0.0.

55. Answer B: Installs both paths and load-balances across them

OSPF supports equal-cost multipath. IOS installs up to 4 equal-cost paths by default (adjustable with maximum-paths).

E1. Answer B: switchport trunk allowed vlan add 30

VLAN 30 is missing from the allowed list. Option A replaces the list with VLAN 30 alone and cuts VLANs 10 and 20. The native VLAN and DTP mode do not control the allowed list.

E2. Answer C: Every ACL ends with an implicit deny any, and no permit statement exists

Traffic that matches neither line hits the implicit deny. Add 30 permit ip any any. The match counters prove the mask and direction already work.

E3. Answer B: GigabitEthernet0/1 toward 10.0.13.3

Longest prefix match is checked before metric. 10.1.1.0/24 is more specific than 10.1.0.0/16, so the /24 wins even with the higher cost of 30. Metrics only compare routes to the same prefix.

E4. Answer B: Clear the old sticky MAC address, then enter shutdown and no shutdown on Fa0/5

The port is err-disabled and still holds the old PC's sticky MAC. Bouncing the port alone triggers a new violation as soon as the new PC sends a frame. Remove the old sticky entry (or raise the maximum), then shutdown and no shutdown.

Part 4. Domain score tracker

Count your correct answers per domain. Any domain under 75% is your next study block, in the order listed by blueprint weight.

Domain (v1.1 weight)	Questions	Your score	75% line	If below 75%, study
IP Connectivity (25%)	4, 5, 6, 7, 38, 39, 46, 51, 52, 53, 54, 55	___ / 12	9	routing table reading, AD vs metric, longest match, OSPF neighbor states and DR election
Network Fundamentals (20%)	1, 2, 3, 40, 41, 42, 43, 44, 45	___ / 9	7	subnetting speed drills, IPv6 address types and EUI-64, cabling and duplex faults
Network Access (20%)	8, 9, 22, 23, 24, 25, 26, 27, 29	___ / 9	7	VLANs, trunks and DTP, STP root election and PortFast/BPDU Guard, EtherChannel, wireless basics
Security Fundamentals (15%)	10, 11, 28, 30, 31, 32, 33, 35	___ / 8	6	ACL wildcards and placement, port security defaults, DHCP snooping and DAI, AAA, SSH setup
IP Services (10%)	12, 13, 16, 17, 18, 34, 36, 37, 47, 48	___ / 10	8	DHCP server and relay, NAT/PAT terms, syslog, NTP, SNMP, DNS troubleshooting
Automation and AI (10%)	14, 15, 19, 20, 21, 49, 50	___ / 7	6	REST methods, JSON syntax, controller interfaces, Ansible, management approaches, AI prompt safety
Exhibits E1 to E4	E1, E2, E3, E4	___ / 4	3	Reading show command output; practice with the mini-labs

Reading your total

Total (of 59)	What it means	Next step
50 or more (85%+)	Close to ready	Confirm with a second set of unseen questions under timed, no-review conditions
42 to 49	Gaps in one or two domains	Run the tracker's study list for those domains, then retest
41 or fewer	Foundations not yet solid	Return to the topics and labs before more question practice

Part 5. Quick reference

Subnetting

Prefix	Mask	Block size	Usable hosts
/24	255.255.255.0	256	254
/25	255.255.255.128	128	126
/26	255.255.255.192	64	62
/27	255.255.255.224	32	30
/28	255.255.255.240	16	14
/29	255.255.255.248	8	6
/30	255.255.255.252	4	2
/20	255.255.240.0	16 (third octet)	4,094

Administrative distance (lower wins)

Source	Connected	Static	EIGRP	OSPF	RIP	External EIGRP	Unknown
AD	0	1	90	110	120	170	255

OSPF neighbor states and what a stuck state means

Stuck in	Usual cause
DOWN / INIT	Hellos one-way: ACL blocking 224.0.0.5, passive interface on one side, or a Layer 1/2 fault
No neighbor at all	Mismatched area, hello/dead timers, subnet, or authentication
2-WAY	Normal between two DROTHERs on a broadcast segment
EXSTART / EXCHANGE	Interface MTU mismatch
FULL	Adjacency complete

Syslog severity levels

0	1	2	3	4	5	6	7
Emergencies	Alerts	Critical	Errors	Warnings	Notifications	Informational	Debugging

Ports to know

FTP	SSH	Telnet	SMTP	DNS	DHCP	TFTP	HTTP
TCP 20/21	TCP 22	TCP 23	TCP 25	UDP/TCP 53	UDP 67/68	UDP 69	TCP 80
NTP	SNMP	SNMP trap	HTTPS	Syslog	TACACS+	RADIUS	CAPWAP
UDP 123	UDP 161	UDP 162	TCP 443	UDP 514	TCP 49	UDP 1812/1813	UDP 5246/5247

Look-alike features

Pair	Difference
Dynamic auto vs dynamic desirable	Auto only answers DTP; desirable initiates. Auto plus auto never trunks.
BPDU Guard vs BPDU Filter	Guard err-disables the port on any BPDU; Filter stops sending and processing BPDUs.

Pair	Difference
Port security protect / restrict / shutdown	Drop silently / drop and log / err-disable (default).
allowed vlan vs allowed vlan add	Without add, the list is replaced.
Standard vs extended ACL	Standard matches source only, placed near the destination; extended placed near the source.
TACACS+ vs RADIUS	TACACS+: TCP 49, full payload encrypted. RADIUS: UDP, password only encrypted.

Part 6. Packet Tracer mini-labs

Each lab builds a skill tested in simulation items. The "break it" step trains fault-finding, which v2.0 weights heavily. Cisco Packet Tracer is free with a Cisco Networking Academy account.

Lab 1. VLANs and an 802.1Q trunk

Topology: Two switches, two PCs per switch.

1. Create VLAN 10 and VLAN 20 on both switches and assign one PC per VLAN on each switch.
2. Configure Gi0/1 on both switches as a static trunk (switchport mode trunk) allowing VLANs 10 and 20 only.
3. Break it: on one switch, enter switchport trunk allowed vlan 20. Note which PCs lose contact, then fix it with the add keyword.

Verify with: show vlan brief, show interfaces trunk, ping between same-VLAN PCs

Lab 2. Router-on-a-stick

Topology: Lab 1 topology plus one router on SW1 Gi0/2.

1. Create subinterfaces G0/0.10 and G0/0.20 with encapsulation dot1Q and gateway addresses for each VLAN.
2. Make the switch port toward the router a trunk.
3. Break it: set the wrong VLAN ID on one subinterface and trace the failure with show commands only.

Verify with: show ip interface brief, show interfaces trunk, ping across VLANs

Lab 3. Single-area OSPFv2

Topology: Three routers in a line, a loopback on each.

1. Enable OSPF area 0 on all links and loopbacks, and set router IDs manually.
2. Make R2 the DR on its Ethernet segment using interface priority.
3. Break it: change the MTU on one side of a link with ip mtu, watch the neighbor stick in EXSTART, then fix it.

Verify with: show ip ospf neighbor, show ip ospf interface brief, show ip route ospf

Lab 4. DHCP server, relay, and PAT

Topology: Router R1 as DHCP server, R2 as the client gateway, R2 with an outside interface.

1. Build a DHCP pool on R1 for a remote LAN and exclude the gateway address.
2. Configure ip helper-address on R2's LAN interface pointing to R1.
3. Configure PAT on R2 with an ACL for the LAN and the overload keyword.
4. Break it: remove the helper address and confirm the client falls back to 169.254.x.x.

Verify with: show ip dhcp binding, show ip nat translations, ipconfig on the PC

Lab 5. SSH access and an extended ACL

Topology: One router, one switch, two PCs.

1. Set a hostname and ip domain-name, generate RSA keys (2048-bit), create a local user, and allow only SSH on the VTY lines.
2. Write an extended ACL that blocks HTTP from one PC to a server and permits everything else.
3. Break it: remove the final permit and observe the implicit deny on unrelated traffic.

Verify with: show ip ssh, show access-lists (watch match counters), show ip interface

Part 7. Readiness checklist and exam-day rules

Book the exam when every box is ticked. This is the Dumpsgate instructor standard, not a Cisco pass threshold.

- ■ 85% or higher on two consecutive timed, full-length sets of unseen questions from different sources
- ■ No single domain below 75% on the score tracker
- ■ About 100 items finished in under 100 minutes, leaving time for simulations
- ■ You can explain why each wrong option is wrong on at least 9 of 10 reviewed questions
- ■ All five mini-labs completed from a blank topology without notes, including the break-it steps

Exam-day rules

- You cannot return to a previous question. Decide, then move on.
- Spend about 60 seconds on multiple choice and bank time for simulations.
- If a question stalls you past 3 minutes, choose the best remaining option.
- In simulations, use ? and Tab completion, and verify with a show command before moving on.
- Check your exam version: v1.1 through February 2, 2027; v2.0 from February 3, 2027.

Next step

For more original questions with the same version tags, per-domain scoring, and lab-style items, see the Dumpsgate CCNA question bank: [URL].