

PRACTICE EXAM PACK

IT Cert **Practice** Exam Pack

50 practice questions with clear explanations to get you exam-ready for CompTIA A+ and Network+. Answer, check, and learn the "why."

A+ / Network+

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How to practice

Don't just hunt for the right letter — read every explanation, even for the ones you get right.

- Answer all the questions first — the **Answer Key** with explanations is at the back.
- Try to answer **before** reading the choices — it forces real recall.
- Read the explanation for the wrong choices too; that's where the learning is.
- Redo the ones you miss a few days later. Repetition wins.

NOTE

These mirror the style and topics of the real exams but are original practice items — not actual exam questions.

Networking fundamentals

1. Which OSI layer is responsible for logical addressing and routing between networks?

- A. Data Link
- B. Network
- C. Transport
- D. Session

2. Which protocol provides reliable, connection-oriented delivery?

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

3. A device shows an IP of 169.254.10.5. What most likely happened?

- A. It received a static IP
- B. It got an address from DHCP
- C. It failed to reach a DHCP server (APIPA)
- D. It is using a public IP

4. What does DNS do?

- A. Assigns IP addresses automatically
- B. Resolves domain names to IP addresses
- C. Encrypts web traffic
- D. Routes packets between networks

5. Which device operates primarily at Layer 2 and forwards frames using MAC addresses?

- A. Router
- B. Switch
- C. Firewall
- D. Modem

6. Which address is a valid private IPv4 range?

- A. 11.0.0.0/8
- B. 172.32.0.0/12
- C. 192.168.0.0/16
- D. 169.254.0.0/16

IP addressing & subnetting

7. How many usable hosts are in a /26 network?

- A. 64
- B. 62
- C. 30
- D. 126

8. What subnet mask matches /27?

- A. 255.255.255.192
- B. 255.255.255.224
- C. 255.255.255.240
- D. 255.255.255.248

9. Which is the network address for host 192.168.1.70/26?

- A. 192.168.1.0
- B. 192.168.1.64
- C. 192.168.1.32
- D. 192.168.1.128

10. What is the broadcast address of 10.0.0.0/30?

- A. 10.0.0.1
- B. 10.0.0.2
- C. 10.0.0.3
- D. 10.0.0.4

11. IPv6 loopback address is:

- A. 127.0.0.1
- B. ::1
- C. fe80::1
- D. ff02::1

12. Which prefix identifies an IPv6 link-local address?

- A. 2000::/3
- B. fe80::/10
- C. ::/128
- D. fc00::/7

Ports & protocols

13. Which port does HTTPS use?

- A. 80
- B. 443
- C. 22
- D. 3389

14. A user needs secure remote command-line access to a Linux server. Which protocol/port?

- A. Telnet / 23
- B. RDP / 3389
- C. SSH / 22
- D. FTP / 21

15. Which protocol synchronizes clocks across devices?

- A. SNMP
- B. NTP
- C. SMTP
- D. LDAP

16. Which two ports are used by DHCP?

- A. 53 and 54
- B. 67 and 68
- C. 80 and 443
- D. 161 and 162

17. Windows file sharing (SMB) uses which port?

- A. 445
- B. 389
- C. 143
- D. 3306

Routing, switching & VLANs

18. What is the main purpose of a VLAN?

- A. Encrypt traffic
- B. Logically segment a network without extra hardware
- C. Assign IP addresses
- D. Increase cable length

19. What allows devices in different VLANs to communicate?

- A. A hub
- B. Inter-VLAN routing (a router or Layer 3 switch)
- C. A longer cable
- D. Disabling the firewall

20. Which protocol prevents switching loops?

- A. STP
- B. OSPF
- C. DHCP
- D. NAT

21. NAT is primarily used to:

- A. Encrypt traffic
- B. Translate private IPs to a public IP
- C. Assign VLANs
- D. Resolve names to IPs

22. Which is a link-state routing protocol?

- A. RIP
- B. OSPF
- C. NAT
- D. ARP

Wireless & security

23. Which is the most secure wireless encryption standard listed?

- A. WEP
- B. WPA
- C. WPA2
- D. WPA3

24. Which frequency band generally offers longer range but lower speed?

- A. 2.4 GHz
- B. 5 GHz
- C. 6 GHz
- D. 60 GHz

25. A firewall filters traffic primarily based on:

- A. Cable type
- B. Rules (IPs, ports, protocols)
- C. MAC address only
- D. Signal strength

26. Which attack tricks users into revealing credentials via fake emails/sites?

- A. DDoS
- B. Phishing
- C. Spoofing
- D. Sniffing

27. What does MFA add to security?

- A. A faster connection
- B. A second form of verification beyond the password
- C. Encryption of cables
- D. Automatic backups

28. Which principle means giving users only the access they need?

- A. Defense in depth
- B. Least privilege
- C. Zero trust
- D. Fail-safe

Troubleshooting & tools

29. Which command tests basic connectivity to a host?

- A. ping
- B. netstat
- C. arp
- D. chkdsk

30. Which command shows the path packets take to a destination?

- A. ipconfig
- B. tracert / traceroute
- C. nslookup
- D. ping

31. Users can reach sites by IP but not by name. What's the likely issue?

- A. Bad cable
- B. DNS
- C. Power supply
- D. Broken monitor

32. Which command releases and renews a DHCP address on Windows?

- A. ipconfig /release then /renew
- B. ping -t
- C. netstat -r
- D. arp -d

33. Following best practice, the first troubleshooting step is to:

- A. Replace the hardware
- B. Identify the problem / gather information
- C. Reboot everything
- D. Escalate immediately

Hardware & A+ essentials

34. Which connector is used for a wired Ethernet network?

- A. RJ11
- B. RJ45
- C. USB-C
- D. HDMI

35. Which storage interface is fastest?

- A. SATA HDD
- B. SATA SSD
- C. NVMe SSD
- D. USB 2.0 drive

36. A PC is dead — no lights, no fans. What do you check first?

- A. The GPU driver
- B. Power (outlet, cable, PSU switch)
- C. The DNS settings
- D. The BIOS password

37. Which memory type is current-generation (as of 2024–2026)?

- A. DDR2
- B. DDR3
- C. DDR4
- D. DDR5

38. Which display interface is digital and carries both video and audio?

- A. VGA
- B. HDMI
- C. PS/2
- D. RJ45

Mixed review

39. Which cloud model gives you virtual machines and infrastructure that you manage yourself?

- A. SaaS
- B. PaaS
- C. IaaS
- D. DaaS

40. RAID 1 provides data protection through:

- A. Striping
- B. Mirroring
- C. Parity only
- D. Compression

41. Which cable type is best for long distances and is immune to electromagnetic interference?

- A. Cat5e
- B. Coaxial
- C. Fiber optic
- D. Cat6

42. Which DNS record maps a hostname to an IPv4 address?

- A. MX
- B. CNAME
- C. A
- D. AAAA

43. Which DNS record type directs email to the correct mail server?

- A. A
- B. MX
- C. PTR
- D. TXT

44. A technician wants to limit which devices can connect to specific switch ports. What should they use?

- A. Port security
- B. QoS
- C. Spanning Tree
- D. NAT

45. What does PoE deliver over an Ethernet cable?

- A. Extra bandwidth
- B. Electrical power
- C. Encryption
- D. DNS

46. Which backup type copies only data changed since the last backup and is fastest to run?

- A. Full
- B. Differential
- C. Incremental
- D. Snapshot

47. A PC gives repeating beep codes at boot with no display. What's the most likely culprit?

- A. Faulty or unseated RAM
- B. Bad DNS
- C. Expired license
- D. Full hard drive

48. Which tool attaches an RJ45 connector to the end of a cable?

- A. Cable tester
- B. Crimper
- C. Multimeter
- D. Toner probe

49. Which protocol lets IPv6 hosts self-configure addresses without a DHCP server?

- A. SLAAC
- B. APIPA
- C. NAT
- D. ARP

50. A user reports the whole office lost internet, but local file sharing still works. Where do you look first?

- A. Each user's monitor
- B. The router / ISP gateway
- C. Individual keyboards
- D. The DNS record TTLs

Answer key & explanations

Answer the questions first — then check here. Redo any you miss in a couple of days.

1. **B — Network (Layer 3).** IP addressing and routing happen at Layer 3. Switching/MAC is Layer 2; ports are Layer 4.
2. **C — TCP.** TCP uses a 3-way handshake and acknowledgements for reliability. UDP is fast but connectionless.
3. **C — APIPA.** 169.254.x.x is self-assigned when no DHCP server responds — a classic "no DHCP" symptom.
4. **B.** DNS maps names (example.com) to IPs. DHCP assigns addresses; TLS encrypts; routers route.
5. **B — Switch.** Switches forward frames by MAC within a LAN. Routers work at Layer 3 between networks.
6. **C.** 192.168.0.0/16 is private. 10.0.0.0/8 and 172.16.0.0/12 are the others; 169.254 is APIPA, not routable private space.
7. **B — 62.** /26 = block size 64, minus network and broadcast = 62 usable.
8. **B — 255.255.255.224.** /27 sets 3 bits in the last octet ($128+64+32 = 224$).
9. **B — 192.168.1.64.** /26 block size is 64, so subnets start at .0, .64, .128, .192. Host .70 falls in the .64 subnet.
10. **C — 10.0.0.3.** /30 = block size 4 (.0 network, .1–.2 usable, .3 broadcast). Common on point-to-point links.
11. **B — ::1.** In IPv6, ::1 is loopback. fe80::/10 is link-local; 127.0.0.1 is the IPv4 loopback.
12. **B — fe80::/10.** Link-local addresses start with fe80. fc00::/7 is unique local; 2000::/3 is global unicast.
13. **B — 443.** HTTPS = 443 (TLS-encrypted web). HTTP = 80.
14. **C — SSH / 22.** SSH is encrypted CLI access. Telnet (23) is the insecure equivalent.
15. **B — NTP (port 123).** SNMP monitors devices; SMTP sends mail; LDAP is directory services.
16. **B — 67 and 68.** Server uses 67, client uses 68. 161/162 is SNMP; 53 is DNS.
17. **A — 445.** SMB = 445. 389 is LDAP, 143 is IMAP, 3306 is MySQL.
18. **B.** VLANs create separate broadcast domains on the same switch — segmentation and security without new switches.
19. **B.** VLANs are isolated at Layer 2; you need Layer 3 routing to move traffic between them.
20. **A — STP (Spanning Tree Protocol).** It blocks redundant paths to prevent Layer 2 loops.
21. **B.** NAT lets many private hosts share one public IP to reach the internet.
22. **B — OSPF.** OSPF is link-state; RIP is distance-vector. ARP and NAT aren't routing protocols.
23. **D — WPA3.** WPA3 is newest/strongest. WEP is obsolete and easily cracked.
24. **A — 2.4 GHz.** Lower frequency = better range/penetration but more interference and lower throughput than 5 GHz.
25. **B.** Firewalls allow/deny traffic using rule sets based on source/destination IP, port, and protocol.
26. **B — Phishing.** Social-engineering to steal credentials. It's one of the most common real-world threats.
27. **B.** Multi-factor authentication requires something you know + have/are, so a stolen password alone isn't enough.
28. **B — Least privilege.** Minimizing access limits damage if an account is compromised.
29. **A — ping.** It sends ICMP echo requests to test reachability and latency.
30. **B.** tracert (Windows) / traceroute (Linux) reveals each hop — useful for locating where a path breaks.
31. **B — DNS.** If IP works but names don't, name resolution (DNS) is failing.

32. **A. ipconfig /release then /renew** forces a new DHCP lease.
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33. **B.** The CompTIA methodology starts with identifying the problem before forming a theory or acting.
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34. **B — RJ45.** RJ45 is the 8-pin Ethernet connector. RJ11 is for phone lines.
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35. **C — NVMe SSD.** NVMe runs over PCIe, far faster than SATA. Any SSD beats a spinning HDD.
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36. **B.** No power at all points to the power source/PSU — start with the simplest, most likely cause.
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37. **D — DDR5.** DDR5 is the newest mainstream standard; DDR4 is still very common.
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38. **B — HDMI.** HDMI carries digital video + audio. VGA is analog video only.
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39. **C — IaaS.** Infrastructure as a Service provides VMs, storage, and networking you control. SaaS is finished apps; PaaS is a dev platform.
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40. **B — Mirroring.** RAID 1 writes identical copies to two disks. RAID 0 stripes (no redundancy); RAID 5 uses striping with parity.
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41. **C — Fiber optic.** Fiber uses light, so it's immune to EMI and spans much longer distances than copper.
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42. **C — A record.** A maps a name to IPv4; AAAA maps to IPv6; MX is for mail; CNAME is an alias.
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43. **B — MX (Mail Exchange).** MX records tell senders which server handles a domain's email.
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44. **A — Port security.** It restricts a port to specific MAC addresses, blocking unauthorized devices.
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45. **B — Power.** Power over Ethernet powers devices like IP phones, APs, and cameras through the data cable.
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46. **C — Incremental.** Incremental backs up changes since the last backup (fastest to create, slower to restore). Differential grows until the next full.
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47. **A — RAM.** POST beep codes commonly signal a memory problem; reseal or replace the RAM.
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48. **B — Crimper.** A crimper terminates connectors. A cable tester verifies wiring; a toner probe locates cables.
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49. **A — SLAAC.** Stateless Address Autoconfiguration lets IPv6 devices build their own address from router advertisements.
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50. **B — The router / ISP gateway.** LAN works but internet is down for everyone → the shared edge device or ISP link is the common point of failure.
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Review, repeat, pass

Miss a few? Good — those are exactly the ones to redo in a couple of days.

Want the explanations on video?

I break down these exact topics on the channel — subnetting, ports, VLANs, and more.

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