CompTIA A+ Core 1 (220-1101) Free Sample (30 Questions)

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Q1. A field technician's company laptop shuts down without warning about twenty minutes after unplugging it from the wall, even though the battery icon showed 60% charge. The laptop is three years old. Which component is the most likely cause?

A) The AC adapter, which can no longer supply enough wattage to charge the battery
B) The system board, because the charging circuit has failed completely
C) The battery, whose cells have degraded and can no longer hold a reliable charge
D) The hard drive, which draws excessive power when its bearings wear out

Correct answer: C Explanation: An aging lithium-ion battery loses capacity and its fuel-gauge circuitry becomes inaccurate, so the reported 60% is fiction and the pack dies under load. A) A failed adapter would not charge at all or would show no charging indicator. Tempting because adapters do fail. B) A failed charging circuit would prevent charging entirely rather than cause mid-use shutdowns. D) A worn hard drive draws marginally more power but cannot drain a healthy battery in twenty minutes. Tempting because old laptops have old drives.

Q2. A help desk technician needs to join a new Windows workstation to the company's Active Directory domain. The workstation currently shows a workgroup name. Where is the correct setting to change this?

A) Control Panel > Network and Sharing Center > Change adapter settings
B) Settings > Accounts > Sign-in options > Join a domain
C) Device Manager > Network adapters > Properties > Advanced
D) Settings > System > About > Rename this PC > Change to a domain

Correct answer: D Explanation: Domain membership is changed under System > About, where the 'Rename this PC' / domain-or-workgroup dialog lives. A) Adapter settings configure the NIC, not domain membership. Tempting because it is network-related. C) Device Manager manages hardware drivers, not domain joins. B) Sign-in options control Windows Hello and passwords, not domain membership. Tempting because joining a domain affects logon.

Q3. A small office has a single multifunction printer shared by twelve employees. Print jobs frequently fail when several people print at once, and the printer's small display shows 'memory full'. What is the most practical first step?

A) Replace the printer's formatter board, which handles all network communication
B) Install additional printer memory (RAM) so the device can spool larger job queues
C) Switch every workstation from the PCL driver to the PostScript driver
D) Connect the printer with a USB cable instead of the network to speed up transfers

Correct answer: B Explanation: 'Memory full' on shared printers means the onboard RAM cannot hold the queued jobs; adding printer memory directly addresses it. A) The formatter board is an expensive part replaced only after diagnosis. Tempting as 'the board that does everything'. C) Changing page-description languages does not increase spool capacity. Tempting because driver issues cause many print problems. D) USB does not increase the printer's memory. Tempting because USB feels faster than network.

Q4. A technician is building a PC for video editing. The motherboard manual lists support for 'DDR5-5600 (OC)'. The technician has a DDR4-3200 kit from a previous build. What is true?

A) The DDR4 kit will work but will automatically overclock to 5600 MT/s
B) The DDR4 kit will work if installed in the DDR5 slots with a BIOS update
C) The DDR4 kit is physically incompatible; DDR4 and DDR5 use different slots and notches
D) The DDR4 kit will work at reduced capacity, using only half its modules

Correct answer: C Explanation: DDR4 and DDR5 DIMMs have different pin counts, voltages, and notch positions, so a DDR4 module cannot fit in a DDR5 slot. A) Memory never overclocks itself to match the board's rating. Tempting for 'it will just run faster' thinking. B) No BIOS update changes physical slot geometry. Tempting because BIOS updates fix many compatibility issues. D) Capacity is unrelated to the generation mismatch. Tempting as a compromise answer.

Q5. A user's smartphone will not connect to the office Wi-Fi, though it connects fine to the home network. Other phones connect to the office Wi-Fi without issue. The office uses WPA2-Enterprise with a RADIUS server. What should the technician check first?

A) Whether the phone's Wi-Fi radio supports the 6 GHz band used by the office
B) Whether the phone needs a static IP address instead of DHCP
C) Whether the office router's DHCP scope has enough free addresses
D) Whether the correct corporate username, password, and certificate are configured on the phone

Correct answer: D Explanation: WPA2-Enterprise requires per-user credentials (and often a certificate); a phone that works on a WPA2-Personal home network but fails on Enterprise almost always has wrong or missing EAP credentials. A) Band support would affect all Enterprise networks, not just this one. Tempting because 6 GHz is new. C) DHCP exhaustion would affect all devices, not one phone. B) Static IPs are a workaround, not a first step, and would not fix an authentication failure.

Q6. A technician needs to run a single network cable 85 meters from a switch to a new workstation through a drop ceiling that contains fluorescent lighting ballasts. Which cable choice is best?

A) Cat5e UTP, because it is rated for 100 meters and is the cheapest option
B) Cat6 STP, because the shielding resists interference from the ballasts
C) RG-6 coaxial, because it carries network signals farther than twisted pair
D) Multimode fiber, because copper cannot run 85 meters under any circumstances

Correct answer: B Explanation: Fluorescent ballasts generate electromagnetic interference, so shielded twisted pair (STP) is the right call, and Cat6 handles the 85-meter run within the 100-meter Ethernet limit. A) UTP is vulnerable to the ballast EMI in the ceiling. Tempting because 85 m is within spec and it is cheaper. C) RG-6 is for cable TV/satellite, not Ethernet to a workstation. D) Copper Ethernet runs fine to 100 meters; fiber is overkill here. Tempting because fiber is 'better'.

Q7. A customer reports that their inkjet printer produces pages with horizontal white lines through text and images. The ink cartridges were replaced last week. What is the most likely cause and fix?

A) The fuser assembly is failing; replace the fuser unit
B) The toner cartridge is empty; shake the cartridge to redistribute toner
C) The printhead nozzles are clogged; run the printer's printhead cleaning cycle

D) The paper type setting is wrong; change it from plain to glossy in the driver

Correct answer: C Explanation: Horizontal white banding on inkjets is the classic symptom of clogged printhead nozzles; the built-in cleaning cycle purges them. A) Fusers are laser-printer parts, not inkjet parts. Tempting because fusers cause many laser defects. B) Toner cartridges belong to laser printers, and shaking is a laser trick. Tempting as generic printer advice. D) Paper settings affect quality but not banding from clogged nozzles.

Q8. A technician is troubleshooting a PC that powers on but shows nothing on the monitor and emits one long beep followed by two short beeps. The technician reseated the RAM with no change. What should be checked next?

A) The hard drive, because the system cannot find a boot device
B) The power supply, because beep codes always indicate insufficient wattage
C) The CMOS battery, because a dead battery prevents the POST from completing
D) The video card, because this beep code commonly indicates a video adapter problem

Correct answer: D Explanation: One long plus two short beeps is the traditional Award BIOS code for a video card error; reseat or test the GPU next. B) PSU problems cause no-power or shutdowns, not this beep pattern. Tempting because power causes many symptoms. C) A dead CMOS battery causes lost settings and clock errors, not this beep code. A) A missing boot device produces an on-screen message, not beeps with a blank display.

Q9. A company wants to give developers isolated test environments on their existing workstations without buying new hardware. Each environment needs its own operating system. Which solution fits best?

A) Type 1 hypervisors installed on bare metal, replacing each workstation's OS
B) Type 2 hypervisors running virtual machines on top of the existing workstation OS
C) Containers, because they virtualize the hardware for each guest OS
D) Dual-boot configurations with a separate partition for each test OS

Correct answer: B Explanation: A Type 2 (hosted) hypervisor like VirtualBox or VMware Workstation runs VMs as applications on the existing OS, giving each developer isolated guest systems with no new hardware. A) Type 1 hypervisors replace the host OS, which is disruptive for developer workstations. Tempting because Type 1 is 'better' for servers. C) Containers share the host kernel and cannot run a different OS. Tempting because containers are trendy. D) Dual-booting requires rebooting to switch systems and wastes disk. Tempting as the old-school approach.

Q10. A laptop's built-in display shows a very dim image that is only visible when a flashlight is held to the screen. An external monitor connected to the laptop works perfectly. Which component has most likely failed?

A) The LCD panel itself, because the liquid crystals can no longer polarize light
B) The backlight or inverter, because the panel renders the image but has no illumination
C) The GPU, because it cannot drive the internal display at full brightness
D) The display cable, because a loose cable always causes dim output

Correct answer: B Explanation: A visible-but-unlit image with a working external monitor points to the backlight system (LED backlight or inverter on older CCFL panels), not the panel or GPU. A) A failed panel shows no image at all or severe artifacts. Tempting because the panel is the visible part. C) A GPU fault

would affect the external monitor too. D) Cable faults cause flicker, lines, or no image, not uniform dimness with a perfect external picture.

Q11. A network administrator needs to divide 192.168.10.0/24 into subnets for four departments, each needing at least 50 host addresses. Which subnet mask should be used?

A) 255.255.255.128 (/25), giving 126 usable hosts per subnet
B) 255.255.255.224 (/27), giving 30 usable hosts per subnet
C) 255.255.255.192 (/26), giving 62 usable hosts per subnet
D) 255.255.255.0 (/24), giving 254 usable hosts in a single subnet

Correct answer: C Explanation: A /26 yields four subnets with 62 usable hosts each, satisfying the 50-host requirement with minimal waste. B) A /27 gives only 30 usable hosts, too few. Tempting because it makes more subnets. A) A /25 gives only two subnets, too few for four departments. Tempting because the host count fits. D) A /24 is a single subnet, not four. Tempting because the host count is plenty.

Q12. A user complains that their new USB-C dock charges their laptop but the external monitors connected to the dock show no signal. The same dock works fully with a coworker's laptop. What is the most likely explanation?

A) The dock's power supply is undersized and cannot drive the monitors
B) The user's laptop USB-C port does not support DisplayPort Alt Mode or Thunderbolt
C) The monitors need to be connected with HDMI instead of DisplayPort cables
D) The dock requires a firmware update before video will work on any laptop

Correct answer: B Explanation: Charging works over basic USB-C power delivery, but video requires the port to support DisplayPort Alt Mode or Thunderbolt; many budget laptops have charge-only USB-C ports. A) An undersized supply would cause charging or stability issues, and the dock works for the coworker. C) Cable type does not explain why the same dock works elsewhere. D) Firmware would affect all laptops, not just one.

Q13. A technician must replace a failed 3.5-inch SATA hard drive in a desktop with an SSD. Which statement about the replacement is correct?

A) The SSD must be the exact same capacity as the failed drive or the BIOS will reject it
B) The SSD requires a different power connector, so the power supply must also be replaced
C) SATA SSDs are incompatible with motherboards that previously used SATA hard drives
D) A 2.5-inch SATA SSD will work with the existing SATA data and power cables, possibly needing a mounting adapter

Correct answer: D Explanation: 2.5-inch SATA SSDs use identical SATA data and power connectors; only a 3.5-to-2.5-inch bracket may be needed for mounting. B) SATA power connectors are standard across HDDs and SSDs. Tempting because SSDs feel like new technology. C) The SATA interface is the same; the motherboard cannot tell HDD from SSD. A) Capacity is unrestricted; the BIOS accepts any size. Tempting because of old BIOS size limits from decades ago.

Q14. An office is experiencing slow Wi-Fi in a conference room far from the access point. The AP uses 802.11ac on the 5 GHz band. Which change is most likely to improve coverage in that room?

A) Change the security from WPA2 to WEP to reduce encryption overhead
B) Enable 160 MHz channel width to double the throughput to the room

C) Switch the AP to the 2.4 GHz band, which propagates farther through walls
D) Disable the 5 GHz radio entirely so all clients use 6 GHz

Correct answer: C Explanation: 2.4 GHz signals travel farther and penetrate walls better than 5 GHz, trading peak speed for range, which is what a distant room needs. B) Wider channels increase speed at short range but reduce range and increase interference. Tempting because 'more bandwidth' sounds better. A) WEP is broken security and does not improve range. D) 6 GHz has even shorter range than 5 GHz. Tempting because newer sounds better.

Q15. A technician is installing a new NVMe M.2 SSD in a desktop. The drive is not detected in the BIOS. The motherboard manual shows the M.2 slot shares bandwidth with two SATA ports. What should the technician check first?

A) Whether those SATA ports are occupied, since populating them can disable the M.2 slot
B) Whether the SSD needs to be formatted with NTFS before the BIOS can see it
C) Whether the power supply has a dedicated M.2 power cable connected
D) Whether the SSD is installed in the correct DIMM slot next to the RAM

Correct answer: A Explanation: Many boards multiplex PCIe lanes between the M.2 slot and specific SATA ports; drives plugged into those SATA ports disable the M.2 slot. B) Formatting happens in the OS; the BIOS detects unformatted drives. Tempting because new drives need preparation. C) M.2 drives draw power from the slot; there is no M.2 power cable. D) M.2 SSDs go in M.2 slots, not DIMM slots. Tempting for a novice mixing up slot types.

Q16. A company is choosing between buying physical servers and renting virtual servers from a cloud provider that handles the hardware, virtualization, and networking while the company manages its own operating systems and applications. Which cloud service model is this?

A) SaaS, because the provider manages everything including the applications
B) PaaS, because the customer only deploys code with no server management at all
C) IaaS, because the provider supplies virtualized infrastructure while the customer manages OS and up
D) On-premises, because the servers are physically located in the provider's datacenter

Correct answer: C Explanation: This is Infrastructure as a Service: the provider owns hardware through virtualization, and the customer controls the guest OS upward. A) SaaS would mean the provider also manages the applications. Tempting because 'the cloud manages things'. B) PaaS abstracts the OS away too; here the company still manages it. D) On-premises means the company owns the hardware. Tempting because servers are physical somewhere.

Q17. A desktop PC randomly reboots, and the technician notices the CPU temperature in the BIOS reads 96 C at idle. The fans are spinning. What is the most likely cause?

A) The CMOS battery is dead, causing the temperature sensors to report incorrectly
B) Dried-out or improperly applied thermal paste between the CPU and heatsink
C) The power supply wattage is too high for the motherboard's voltage regulators
D) The hard drive is failing and generating excess heat inside the case

Correct answer: B Explanation: 96 C at idle with spinning fans means heat is not transferring from CPU to heatsink, the classic sign of failed thermal paste or a poorly seated cooler. A) A dead CMOS battery causes clock and settings loss, not extreme heat readings. C) Excess PSU wattage does not overheat the CPU; components draw what they need. Tempting because power and heat are related. D) A failing drive

adds little heat and would not cook the CPU.

Q18. A technician needs to test whether a network cable run is correctly wired end-to-end and identify which wire map faults exist. Which tool is purpose-built for this?

A) A cable tester, which verifies continuity and the wire map of each pair
B) A tone generator and probe, which traces a cable through walls and ceilings
C) A multimeter, which measures the exact resistance of each copper conductor
D) An OTDR, which locates faults in fiber-optic cable over long distances

Correct answer: A Explanation: A cable tester checks each conductor for continuity, shorts, and correct pin-to-pin mapping, reporting faults like split pairs. B) A tone generator traces cable location but does not verify the wire map. Tempting because it is also a cable tool. C) A multimeter can check continuity but not the full wire map efficiently. D) An OTDR is for fiber, not twisted-pair copper. Tempting as the 'advanced' cable tool.

Q19. A user's Android phone is overheating and the battery drains in two hours. The technician finds an unknown app with high background data usage that reinstalls itself after removal. What is the best next step?

A) Enable battery-saver mode to reduce the drain caused by the app
B) Replace the battery, because swollen batteries cause overheating
C) Install a third-party task killer to force-stop the app whenever it restarts
D) Back up the user's data, perform a factory reset, and reinstall only trusted apps

Correct answer: D Explanation: A self-reinstalling rogue app indicates malware with persistence; a factory reset wipes it, and selective reinstallation prevents reinfection. A) Battery saver treats the symptom, not the malware. Tempting as a quick fix. C) Task killers cannot defeat persistent malware and often worsen battery life. B) The battery is a victim of the rogue app's drain, not the cause.

Q20. A small business owner asks whether to use RAID 0 or RAID 1 for the file server holding the company's accounting data. Which advice is correct?

A) Use RAID 0, because striping provides redundancy if one drive fails
B) Use RAID 0, because it is the only RAID level that works with two drives
C) Use RAID 1, because mirroring keeps a complete copy of data on each drive
D) Neither; RAID levels only improve speed and never protect data

Correct answer: C Explanation: RAID 1 mirrors every write to both drives, so one drive can fail without data loss, which is what accounting data needs. A) RAID 0 stripes data with no redundancy; one failed drive destroys the array. Tempting because 'RAID' sounds safe. B) Both RAID 0 and RAID 1 work with two drives. D) Mirroring and parity levels do protect data. Tempting for students who only remember RAID 0.

Q21. A technician connects a new network printer via Ethernet, but workstations cannot find it. The printer's display shows an APIPA address of 169.254.44.10. What does this indicate?

A) The printer's NIC has failed and is generating a random hardware address
B) The printer could not reach a DHCP server and assigned itself a link-local address
C) The network uses static addressing and 169.254.x.x is the correct server subnet
D) The printer is connected to the wrong VLAN and needs its port reassigned

Correct answer: B Explanation: 169.254.x.x is an APIPA address Windows and printers self-assign when no DHCP server responds; the fix is restoring DHCP or configuring a proper static IP. A) APIPA is a software fallback, not a NIC failure. Tempting because the address looks 'wrong'. C) 169.254.0.0/16 is reserved for link-local, never a real server subnet. D) VLAN issues would more likely give no address at all. Tempting because VLANs cause many printer issues.

Q22. A customer wants to print high-volume black-and-white office documents at the lowest cost per page. Which printer type should the technician recommend?

A) A monochrome laser printer, because toner-based printing has the lowest per-page cost at volume
B) An inkjet printer, because ink cartridges are cheaper to buy than toner
C) A thermal printer, because it needs no ink or toner at all
D) A dye-sublimation printer, because it produces the sharpest text

Correct answer: A Explanation: Monochrome lasers dominate high-volume office printing: toner cartridges yield thousands of pages at a fraction of a cent per page. B) Inkjet cartridges are cheap upfront but cost far more per page. Tempting because of the low purchase price. C) Thermal printers suit receipts and labels, not office documents. D) Dye-sublimation is for photo-quality color prints at high cost per page.

Q23. A technician is upgrading a workstation's 450W power supply to support a new graphics card that requires a 650W PSU minimum. Which is the most important specification to verify besides wattage?

A) That the new PSU's fan is larger than the old PSU's fan
B) That the new PSU is from the same manufacturer as the old one
C) That the new PSU has a higher 80 Plus rating than the motherboard requires
D) That the new PSU has the required PCIe power connectors for the graphics card

Correct answer: D Explanation: High-end GPUs need dedicated 6-pin or 8-pin PCIe power connectors; wattage alone is useless without them. B) Manufacturer matching is irrelevant. Tempting as brand loyalty. C) 80 Plus measures efficiency, not compatibility. Tempting because ratings sound important. A) Fan size does not determine compatibility or quality.

Q24. A user reports that websites load very slowly, but a speed test shows full bandwidth. The technician runs 'nslookup' and queries take over five seconds. What is the most likely cause?

A) A failing network cable causing packet loss on every web request
B) Incorrect or slow DNS server settings, delaying name resolution before each page load
C) The web browser's cache being too large and slowing down rendering
D) The user's monitor refresh rate being set too low

Correct answer: B Explanation: Slow nslookup with full bandwidth isolates the problem to DNS: every new site waits seconds for name resolution while raw throughput is fine. A) Packet loss would also degrade the speed test. Tempting because cables cause slowness. C) A large cache slows the browser, not DNS queries. D) Refresh rate affects display smoothness, not loading times.

Q25. A technician needs to access the BIOS/UEFI setup on a new PC to enable virtualization extensions. The system boots too fast to see the prompt. What is the most reliable method?

A) Remove the CMOS battery to force the system into setup on next boot
B) Hold down the power button for ten seconds during the Windows logo
C) Use Windows Advanced Startup to reboot directly into UEFI firmware settings

D) Unplug all USB devices, which slows the boot enough to catch the key

Correct answer: C Explanation: Windows Settings > Recovery > Advanced Startup > Troubleshoot > UEFI Firmware Settings reboots straight into setup, bypassing the fast-boot timing problem. A) Removing the battery resets settings but does not open setup reliably. Tempting as a 'reset everything' move. B) Holding power forces a shutdown, not setup entry. D) USB devices do not meaningfully slow modern fast boot.

Q26. A company's new open-office has 40 workstations and one network printer. The technician must choose a topology for the wired network. Which is the standard, most practical choice?

A) A star topology with a central switch, because it is easy to troubleshoot and isolate faults
B) A bus topology with a single backbone cable, because it uses the least cabling
C) A ring topology, because token passing prevents all network collisions
D) A mesh topology, because every workstation needs redundant paths

Correct answer: A Explanation: Star (every device homed to a central switch) is the universal office standard: one bad cable affects one machine and faults are trivial to isolate. B) Bus is obsolete and one break kills the whole segment. Tempting because it saves cable. C) Ring/Token Ring is legacy technology. Tempting from textbook history. D) Full mesh for 40 workstations is absurdly expensive and unnecessary.

Q27. A technician is installing RAM in a motherboard with four slots configured for dual-channel operation. There are two identical 8GB modules. Which installation is correct?

A) Install both modules in the two slots of the same color (usually slots 1 and 3 or 2 and 4)
B) Install both modules in adjacent slots regardless of color
C) Install one module; the second slot must remain empty for dual-channel
D) Install the modules in slots 1 and 2, leaving 3 and 4 for a future upgrade

Correct answer: A Explanation: Dual-channel requires one module per channel, and boards color-code the paired slots (typically A1/B1 or slots 1&3); matching colors puts one DIMM on each channel. B) Adjacent slots are usually the same channel, giving single-channel operation. Tempting because 'together' feels right. C) One module is single-channel by definition. D) Slots 1 and 2 are typically the same channel. Tempting as the numerically tidy choice.

Q28. A user's PC takes ten minutes to boot and is unusable for another five minutes after login. Task Manager shows 100% disk usage by 'Antimalware Service Executable' and the system service host. The PC has a 5400 RPM hard drive and 4GB of RAM. What upgrade helps most?

A) Replacing the hard drive with an SSD, which eliminates the disk bottleneck
B) Adding a second monitor to spread the startup programs across displays
C) Upgrading the CMOS battery to improve BIOS boot times
D) Installing a faster optical drive for quicker disc access

Correct answer: A Explanation: A 5400 RPM drive cannot keep up with modern OS background I/O, pinning disk at 100%; an SSD removes the bottleneck and typically cuts boot to under a minute. B) A monitor does not affect boot or disk I/O. Tempting as a generic 'upgrade'. C) The CMOS battery only keeps clock and settings. D) Optical drives are irrelevant to boot and OS responsiveness.

Q29. A technician must connect a PC to a switch in the next room, a 60-meter run. The building has older Cat5 cable in the walls. The customer wants gigabit speeds. What should the technician do?

A) Use the existing Cat5; it is certified for gigabit Ethernet at any distance
B) Use a crossover cable instead of a straight-through cable for the long run
C) Install a fiber converter at each end and run fiber instead of copper
D) Run new Cat5e or Cat6 cable, because Cat5 is not rated for gigabit speeds

Correct answer: D Explanation: Cat5 is rated only to 100 Mbps; gigabit (1000BASE-T) requires Cat5e or better, so the old run must be replaced. A) Cat5 sometimes 'works' for gigabit over short runs but is out of spec and unreliable. Tempting because it often links up. C) Fiber works but is unnecessary cost for 60 meters. B) Modern ports auto-MDIX; crossover is irrelevant to speed. Tempting from older textbooks.

Q30. A mobile device management (MDM) administrator needs to ensure that lost company phones cannot have their data read by whoever finds them. Which MDM-enforced setting provides this?

A) Full-device encryption, so stored data is unreadable without the unlock credentials
B) Remote ring, so the phone makes noise until the owner hears it
C) Geofencing, so the phone only works inside company buildings
D) App whitelisting, so only approved apps can be installed

Correct answer: A Explanation: Encryption scrambles all stored data; without the PIN/password/biometric, a finder gets ciphertext. B) Remote ring helps locate a nearby phone, not protect data. Tempting because it is a famous MDM feature. C) Geofencing restricts where apps run; it does not encrypt data. D) Whitelisting controls which apps install, not data readability.