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Practice Questions



Practice  
Tests



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**EXAM✓CRAM**

**CompTIA® A+**  
**Practice Questions Core 1**  
**(220-1101) and**  
**Core 2 (220-1102)**

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which stands for Printer Command Language, was developed by HP so that a computer can properly communicate with impact or thermal printers. PnP, which stands for plug and play, is a Windows technology that allows devices to be located and installed automatically.

**34. Answer: A**

**Explanation:** The CPU is the least likely component to be replaced. You would probably need to replace other equipment, too, in this case. Just like PCs, though, the CPU should rarely fail.

**Incorrect answers:** You might upgrade, replace, or add to RAM. M.2 cards are internal cards that can be added or upgraded to incorporate better video or WLAN and Bluetooth. Laptop keyboards fall victim to spilled coffee, overuse, and other damage over time and sometimes need to be replaced.

**35. Answers: C and D**

**Explanation:** 1000 Mbps is 1000 megabits per second, which can also be notated as 1,000,000,000 bits per second or 1 gigabit per second.

**Incorrect answers:** Data transfer is measured in bits per second (bps), not bits per minute. Consequently, 1000 bits per second would be very slow. At their peak, dial-up modems would transfer 56,000 bits per second, and that is considered the slowest Internet access you could find in the United States.

**36. Answer: B**

**Explanation:** Single-mode fiber-optic cable can send data up to hundreds of kilometers, which is farther than any of the other answers.

**Incorrect answers:** Multi-mode fiber-optic cable can send data about 600 meters. STP is a type of twisted pair; all twisted pair is limited to 100 meters, or 328 feet. Coaxial cable is limited to 200 or 500 meters, depending on the type.

**37. Answer: C**

**Explanation:** You should install a USB add-on card. This will give you more ports than the computer already has for use with peripherals. Another option—and a more common option at that—would be to purchase a USB hub.

**Incorrect answers:** Modems, network adapters, and TV tuner cards all have their own purposes and do not allow additional peripherals.

**38. Answer: D**

**Explanation:** A typical speed of a magnetic hard disk drive (HDD) is 7200 revolutions per minute (RPM). Other common speeds include 5400 RPM, 10,000 RPM, and 15,000 RPM. Note that a solid-state drive (SSD) does not have a magnetic disk and therefore is not given an RPM rating or a latency rating.

**Incorrect answers:** A common network data transfer rate is 1000 Mbps. SATA drives commonly have a DTR of 6 Gb/s (600 MB/s). Note that 3.1 GHz is a common CPU frequency, and 32 GB might be the amount of RAM you install in a computer or the size of a USB flash drive.

**39. Answer: A**

**Explanation:** A switch interconnects devices on the same network so that they can communicate, whereas a router interconnects one or more networks.

**Incorrect answers:** All the other answers are incorrect. Remember that a switch is in charge of connecting devices on a LAN, but a router is in charge of connecting a LAN to another LAN, to the Internet, or to both. Multifunction network devices make matters confusing; they combine the functionality of a switch, a router, a wireless access point, and a firewall. Physically, the four-port section of such a device is the switch portion, and the single port that leads to the Internet is the router portion.

**40. Answer: D**

**Explanation:** In a large corporation (or an enterprise environment), tape backup such as Linear Tape-Open (LTO) or Digital Linear Tape (DLT) is the best media for backing up. These tapes can contain lots of data before they fill up. For example, an LTO 5 data cartridge can contain 5 TB of data. Also, LTO tapes are much more durable than USB flash drives.

**Incorrect answers:** LTO and DLT tapes have large capacity, allowing for a huge amount of backup compared to DVDs and dual-layer DVDs (4.7–17 GB) and USB flash drives (typically 32 to 512 GB as of the writing of this book). USB flash drives are not known for longevity; tape backup is more durable. While RAID 5 can contain a lot of data, it is an expensive proposition for a backup solution. Generally, backups are made to tape rather than to storage drives.

**41. Answers: A and D**

**Explanation:** The organization will most likely use a local area network (LAN) for each office and a metropolitan area network (MAN) to connect the three networks. The LANs meet the requirements for each office's internal communications. Most LANs operate at 1 Gbps or faster. The MAN meets the requirement for the connection between the offices within the city. A MAN is the right choice because it can harness the power of fiber-optic cables and other technologies that already exist in the city limits and can provide for 1 Gbps or more throughput.

**Incorrect answers:** A personal area network (PAN) is a group of Bluetooth devices that communicate with each other. A wide area network (WAN) connects multiple LANs but usually over longer distances—often between cities. Also, a WAN does not typically have as much data throughput as a MAN. A storage area network (SAN) is a group of storage arrays, network-attached storage (NAS) devices, and so on. It could be that the offices might use one, but just having a SAN does not meet the throughput requirements; plus, a SAN can be within a LAN, cross over to a MAN, or move beyond to a WAN, so it is somewhat vague when considering the scenario. A wireless local area network (WLAN) might be incorporated as well, but as of the writing of this book (2022), you'd be hard-pressed to get it to meet the 1 Gbps data throughput requirement for all computers.

**42. Answer: D**

**Explanation:** VMware is an example of virtualization software. Actually, VMware is the company, and it makes a multitude of software, including virtualization software such as VMware Workstation (type 1 hypervisor) and VMware ESXi (type 2 hypervisor).

**Incorrect answers:** VDI stands for virtual desktop infrastructure. It's a technology by which operating system desktops can be delivered to PCs, laptops, and thin clients over the network. VMware also happens to make VDI software. Infrastructure as a service (IaaS) is a type of cloud model that allows a company to use the cloud to host networking infrastructure, routing, and VM hosting (which includes various types of virtualization software). In metered utilization, the provider monitors the services rendered so that the provider can properly bill the customer and make sure that the customer's use of services is being handled in the most efficient way.

**43. Answer: D**

**Explanation:** Smartphones typically use Secure Digital (SD) cards—especially microSD cards.

**Incorrect answers:** SSD stands for solid-state drive. This technology is implemented as flash-based drives or as adapter cards with DDR memory and a battery. NVMe drives are high-performance drives used in PCs and laptops. USB flash drives don't fit inside a typical smartphone and so are relegated to hanging on people's key chains and acting as mobile transporters of data.

**44. Answer: C**

**Explanation:** The motherboard in the desktop computer will have to have at least four RAM slots that can work as a quad-channel configuration—meaning all four memory modules can work together, creating a 256-bit memory bus.

**Incorrect answers:** Double Data Rate (DDR) is the technology that most memory modules use today (for example, DDR4 or DDR5). Small outline dual inline memory module (SODIMM) technology is used in laptops, not in desktops. Error correcting code (ECC), which is used to detect and correct errors in memory, is more common in servers than in desktop computers.

**45. Answer: A**

**Explanation:** In this case, you should most likely replace the toner cartridge. Faded lines usually mean that something is wrong with the toner cartridge (or, if separate, the transfer drum). Also replace the toner cartridge if there is faded print, streaks, smearing, or speckling. Know the main steps of the laser printer imaging process: processing, charging, exposing, developing, transferring, fusing, and cleaning. For example, in the charging step, the drum is conditioned/charged by the primary corona wire (negatively charging it) and is prepared for writing. In the transferring step, the paper is positively charged by the transfer corona wire, preparing it to accept the toner from the drum. In the fusing step, the toner is fused to the paper with heat and pressure. In the cleaning step (the last step), the receptacle, rollers, and other items are cleaned and readied for the next print job.

**NOTE**

See the book *CompTIA A+ Core 1 (220-1101) and Core 2 (220-1102) Exam Cram* for more information about laser printer troubleshooting.

**Incorrect answers:** If there were a firmware issue, you would probably have more severe errors in printing, or you might not get any printing at all. “Replace the corona wire” is somewhat vague. Which corona wire—the charging wire or the transferring wire? Either way, it is more likely that you would simply replace the toner cartridge or the transfer drum and not actually replace any “wires.” In today’s modern workplace, you will usually not refill any type of cartridge; however, an incorrect answer is “ink cartridge,” which implies an inkjet printer, whereas the printer in the scenario is a laser printer.

**46. Answer: B**

**Explanation:** When testing the main 24-pin ATX power connector that leads from the power supply to the motherboard, use a power supply unit (PSU) tester or a multimeter. The multimeter can test each individual wire’s voltage, and the PSU tester can test them all in one shot.

**Incorrect answers:** A Torx screwdriver is used to open computers and laptops that have special Torx screws; T-10 is a common size. A receptacle tester is used to test an AC outlet, and multimeters can be used for that as well. A tone and probe kit is used to test telephone and network connections for continuity. However, it can test only one pair of the wires in the cable. For better results when testing network cables, use a proper network cable testing kit. Testing tools are a key ingredient in a computer technician’s toolkit.

**47. Answer: E**

**Explanation:** Be sure that the virtualization host has multiple cores. A good rule of thumb is to use two cores per Linux VM, but that will vary depending on the scenario. So, for example, if you are going to run three Linux VMs, you would want six cores for those VMs. Don’t forget that you will need at least a couple of cores for the hosting OS. That means that the host should have a multicore CPU with at least eight cores. Note that it’s also important to have enough RAM for each VM. In the case of Linux, at least 1 to 2 GB of RAM is required.

**Incorrect answers:** An integrated GPU is probably not necessary here because you are running virtual machines (and as Linux servers, they will most likely be command line only). Liquid cooling and overclocking are okay for gaming computers and other enthusiast performance systems, but they are not commonly used for virtualization hosts at an organization. x86 refers to a 32-bit CPU architecture that can access only 4 GB of RAM. That is an old technology that you want to avoid; instead use a system with a newer x64 (x86-64) CPU.

**48. Answer: C**

**Explanation:** Use a multimeter to verify that the server racks are properly grounded. You need to check the resistance of the grounding wire that attaches from the server rack(s) to a grounding source. To do that, set the multimeter to impedance ( $\Omega$ ). A multimeter can usually verify voltage, amperage, and impedance (and possibly more).

**NOTE**

Remember that in some municipalities, a licensed electrician must perform the work and be present at the inspection.

**Incorrect answers:** A cable tester (or cable certifier) is used to check the continuity of the individual wires in a twisted-pair cable. A tone generator is used to find an individual cable among a group or bundle of cables. A loopback plug is a device used to test the network connectivity of a PC or switch RJ45 port. A voltmeter *only* checks voltage and does not check for resistance. SCADA, which stands for supervisory control and data acquisition, is a control system that offers high-level management of machines and processes.

**49. Answer: A**

**Explanation:** A tablet does not have a touchpad; instead, you use your finger(s) or a stylus to tap on the display (known as a *touchscreen*).

**Incorrect answers:** A tablet has a display and a wireless network adapter. It also has an onscreen keyboard. The question does not specify physical or virtual keyboard. Be ready for vagaries like this on the A+ exam.

**50. Answer: B**

**Explanation:** When troubleshooting a computer system, always look for the most likely and simplest solutions first. The fact that the user might not have turned on her monitor when she first came in is a likely scenario.

**Incorrect answers:** If the monitor *is* on, you can move on down the troubleshooting list. Next, you could check whether the computer is on, whether the computer and monitor are plugged into the AC outlet, and whether the monitor is plugged into the computer. Reinstalling the video driver is much further down the list.

**51. Answer: A**

**Explanation:** Chances are that the computer has faulty memory or a memory module that needs to be reseated properly. The flashing cursor on the screen tells you that the system is not posting properly. The numbers counting up are the system checking the RAM. If the system beeps and freezes during this count-up, there is an issue with the RAM. (Note that, depending on the system and how the BIOS/UEFI is configured, you might not see the POST counting upward.) It could also be incompatible with the motherboard.

**Incorrect answers:** A corrupt MBR would either give a message stating “missing OS” or “the MBR is corrupt.” However, most systems today are GPT based, not MBR based, so you won’t often see these types of boot sector issues. If the OS is corrupted, you get a message to that effect. If the computer attempts to boot off the network, you see gray text and a spinning pipe sign as the machine attempts to find a DHCP server.

**52. Answer: A**

**Explanation:** If you get any address that starts with 169.254, the computer has self-assigned that address. It is known as an APIPA (Automatic Private IP Addressing) address, which is a type of link-local address. Normally, DHCP servers do not use this network number. Using the commands **ipconfig /release** and **ipconfig /renew** might fix the problem if a DHCP server is actually available.

**Incorrect answers:** The POP3 server is for incoming mail. The DNS server is for resolving domain names to IP addresses. AAA means authentication, authorization, and accounting. An example of an AAA server would be a RADIUS server used for wireless authentication.

**53. Answer: D**

**Explanation:** Faded print, ghosted images, or blurry marks could be a sign that the drum has some kind of imperfection or is dirty, especially if the image reappears at equal intervals. Replace the toner cartridge (or, less commonly, the drum only). Another possibility is that the fuser assembly has been damaged and needs to be replaced.

**Incorrect answers:** Blank pages might indicate a problem with the transfer corona wire or primary corona wire; if this is the issue, replace the toner cartridge. Stuck pages, jams, or problems with feeding the paper could be due to the pickup rollers. If the fuser assembly is having problems, you might encounter toner not fusing to the paper, or the paper that exits the printer may be too hot.

**54. Answers: A, B, and D**

**Explanation:** Always make sure that the speaker power cord (if any) is plugged into an AC outlet and that the speakers are turned on (if they have a power button). When a sound card is first installed, Windows should recognize it and either install a driver through plug and play or ask for driver media. For best results, use the manufacturer's driver, the latest of which you can find on its website. Make sure that you plug the speakers into the correct 1/8-inch jack. The speaker out is the one with concentric circles and an arrow pointing out. Or you might have 5.1 (or 7.1) surround sound; in this case, you would use the standard front speaker jack, which is often a green jack.

**Incorrect answers:** It's quite hard to plug a sound card into the wrong slot. For example, if you have a PCI Express (PCIe) x1 sound card (a common standard), you can plug that sound card into any of the available PCIe slots on your motherboard, and it will be recognized. (Word to the wise: If you ever remove the sound card when upgrading other components, make sure you put it back in the same slot.) PCIe cards will not fit in the older PCI slot, though you will rarely use that type of slot anyway.

**55. Answer: D**

**Explanation:** The wireless hardware button is disabled. Always check whether Wi-Fi is enabled. Often this occurs via a key that shares one of the function keys of a laptop. To enable it, press the Fn key and the appropriate function key (such as F12) at the same time. If Wi-Fi is already enabled, make sure that the wireless adapter is enabled in Windows. Also, check whether the laptop is within range of the wireless access point.

**Incorrect answers:** The drivers and the firmware should not be an issue because the laptop was able to connect yesterday. However, you never know what might have happened, so check those later on in your troubleshooting process.

**56. Answer: C**

**Explanation:** The purpose of a DNS server is to resolve (convert) hostnames and domain names to IP addresses. Computers normally communicate via IP addresses, but it is easier for humans to type in names. If example.com is down, you cannot ping the corresponding IP address at all.

**Incorrect answers:** If the DHCP server is down, your workstation will probably not have an IP address on the network and will not ping the corresponding IP address. AD DS stands for Active Directory Domain Services, which is a domain controller and doesn't