|  |
| --- |
| **Multiple Response** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. A technician has determined that a laptop keyboard will need to be removed in order to replace the laptop’s CPU cooling fan.  Which of the following steps will most likely be required before the technician can remove the keyboard from the laptop? (Select TWO.)

|  |  |  |
| --- | --- | --- |
|   | a.  | The keyboard backlight will need to be toggled off by using the appropriate Fn keys. |
|   | b.  | The keyboard cable(s) will need to be disconnected from the ZIF socket(s). |
|   | c.  | The keyboard cable will need to be disconnected from the mini-PCIe slot. |
|   | d.  | The keyboard bezel will need to be removed. |
|   | e.  | The technician will need to remove the display assembly and system board. |

|  |  |
| --- | --- |
| *ANSWER:* | b, d |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. The keyboard backlight component is integrated into the laptop keyboard that illuminates the keys. The laptop will be powered off when the keyboard is removed, making this choice irrelevant. |
|   | b.  | Correct. Typical laptop keyboards are connected to the system board via one or more ribbon cables. The system board end of the ribbon cable utilizes ZIF (zero insertion force) sockets. These cables will need to be disconnected prior to removal of the keyboard. |
|   | c.  | Incorrect. Laptop computers do not use mini-PCIe slots for keyboard connectivity. The mini-PCIe slot is used for wireless and wired network adapters, SATA controllers, FireWire cards, USB cards, and more. |
|   | d.  | Correct. The keyboard bezel is a part of the plastic covers of a laptop and is the cover that surrounds the top of the keyboard. For some laptops, the case top covers the keyboard. Regardless of whether the cover is the bezel or the case top, it will need to be removed first in order to remove the keyboard. |
|   | e.  | Incorrect. The keyboard does connect to the system board; however, the system board does not need to be removed in order to remove the keyboard. Likewise, the display adapter does not need to be removed prior to removing a laptop keyboard. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 4/22/2019 12:34 AM |
| *DATE MODIFIED:* | 5/16/2019 8:51 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. Molly, an end user, connects an external monitor, external keyboard and mouse, and a wired network cable to her laptop while working in the office. She leaves the office frequently to meet with customers and takes the laptop with her. Disconnecting and reconnecting these external connections has become inconvenient. Which of the following devices will allow the user to disconnect and reconnect the laptop to the external connections with the least amount of effort? (Select TWO).

|  |  |  |
| --- | --- | --- |
|   | a.  | USB to RJ-45 dongle |
|   | b.  | Expansion card |
|   | c.  | ZIF connector |
|   | d.  | Port replicator |
|   | e.  | Docking station |

|  |  |
| --- | --- |
| *ANSWER:* | d, e |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. A dongle is used to add an external port to a computer. For example, the USB to RJ-45 dongle connects to the laptop’s USB port and provides an RJ-45 Ethernet network connection. This device will provide only an external wired network connection. |
|   | b.  | Incorrect. An expansion card for a modern laptop is typically a mini-PCIe connector and is accessed by removing an access cover on the bottom of the laptop or by removing the bottom cover. An expansion card will provide additional connectivity but not the convenience of connecting and disconnecting external devices. |
|   | c.  | Incorrect. ZIF stands for zero insertion force and is an internal connector used in a laptop to connect the keyboard and touchpad to the motherboard. |
|   | d.  | Correct. A port replicator typically connects to a laptop using a single USB port and provides the convenience of connecting external connections such as monitors, USB devices, and network patch cables. The port replicator isn’t proprietary, meaning it is designed to work with any laptop with an open USB port. |
|   | e.  | Correct. A docking station provides the same functionality as that of a port replicator but is typically proprietary, meaning it is designed for a specific brand and model of laptop. Older docking stations are connected to a laptop through a proprietary docking port on the bottom of the laptop. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 4/22/2019 12:43 AM |
| *DATE MODIFIED:* | 5/16/2019 10:14 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. A technician needs to service a laptop computer that is experiencing an intermittent problem with the display. Which of the following will be most effective at helping the technician complete the work in a timely and efficient manner? (Select TWO).

|  |  |  |
| --- | --- | --- |
|   | a.  | Provide the customer with a laptop to use while the failing unit is being repaired. |
|   | b.  | Document and label the location of the screws and cables before removing them. |
|   | c.  | Compare the system board display connections with a properly functioning laptop. |
|   | d.  | Organize and place all parts and screws and in one place. |
|   | e.  | Charge the laptop battery pack so it is ready to return to the customer with a full charge. |

|  |  |
| --- | --- |
| *ANSWER:* | b, d |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. Providing a loaner computer to the customer while hers is being repaired is often done but will not help the technician complete the work in a timely fashion. |
|   | b.  | Correct. While most desktop computers contain only one or two types of screws, a laptop may have a variety of screws and washers in various sizes and lengths. It is imperative that a technician document and label screws and cables before removing them. Inserting a screw that is too long may penetrate a cable or circuit board and cause damage. Inserting a screw that is the wrong size can also strip the threads, causing the correct-sized screw not to tighten properly. Documenting and labeling locations will assist in reassembling the unit. |
|   | c.  | Incorrect. If a laptop is disassembled without documenting the location of cables and connectors, this choice may be an option. The question does not state that the unit was already disassembled. |
|   | d.  | Correct. After documenting and labeling the location of the parts and screws, the technician needs to organize them and keep them in one place. Doing so will assist in reassembling the unit. |
|   | e.  | Incorrect. Making sure the battery pack is fully charged after a repair is proper etiquette and should be done. A good time to charge the battery is during the final testing and verification of system functionality. However, this will not necessarily help the technician complete the repair. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 4/22/2019 1:10 AM |
| *DATE MODIFIED:* | 5/22/2019 9:25 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. What type(s) of port transmits both digital audio and digital video with a single connector? Select all that apply.

|  |  |  |
| --- | --- | --- |
|   | a.  | DisplayPort |
|   | b.  | DVI |
|   | c.  | HDMI |
|   | d.  | VGA |
|   | e.  | SPDIF |

|  |  |
| --- | --- |
| *ANSWER:* | a, c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. DisplayPort transmits both digital video and audio, but not analog transmissions. DisplayPorts are slowly replacing older ports, such as VGA and DVI ports. |
|   | b.  | Incorrect. DVI or Digital Video Interface ports transmit both digital and analog video. DVI ports do not transmit audio signals. DVI ports are slowly being replaced by DisplayPorts. |
|   | c.  | Correct. HDMI or High-Definition Multimedia Interface ports transmit digital video and audio, but not analog transmissions. HDMI connections are commonly found in home theater equipment and as ports on both laptop and desktop computers. |
|   | d.  | Incorrect. VGA or Video Graphics Array ports, often known as DB15 ports, transmit analog video only. VGA ports do not transmit audio signals. VGA ports are commonly found on older computers and all older monitors. DisplayPorts are slowly replacing VGA ports. |
|   | e.  | Incorrect. An SPDIF or Sony-Philips Digital Interface is a sound port that supports digital audio at the highest quality. Only audio signals are transmitted. SPDIF connections are commonly found in home theater audio systems. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:40 AM |
| *DATE MODIFIED:* | 6/21/2019 9:42 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. What two different types of firmware may be used on motherboards?

|  |  |  |
| --- | --- | --- |
|   | a.  | BIOS |
|   | b.  | CEFI |
|   | c.  | UEFI |
|   | d.  | CMOS  |

|  |  |
| --- | --- |
| *ANSWER:* | a, c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. Basic Input/Output System or BIOS is the older firmware that is responsible for managing essential devices (such as the keyboard, mouse, hard drive, and monitor) before the OS launches, starting the computer, and managing motherboard settings. |
|   | b.  | Incorrect. CEFI is not a term used in computing. |
|   | c.  | Correct. Unified Extensible Firmware Interface or UEFI is the newer firmware that is responsible for managing essential devices (such as the keyboard, mouse, hard drive, and monitor) before the OS launches, starting the computer, and managing motherboard settings. |
|   | d.  | Incorrect. Complementary Metal Oxide Semiconductor or CMOS holds the firmware and other basic information used by the motherboard. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:59 AM |
| *DATE MODIFIED:* | 6/21/2019 10:00 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. Sometimes an expansion board may have an extra PCIe power connector.  This connector comes in what two different pin configurations?

|  |  |  |
| --- | --- | --- |
|   | a.  | 4-pin |
|   | b.  | 6-pin |
|   | c.  | 8-pin |
|   | d.  | 8+1-pin |

|  |  |
| --- | --- |
| *ANSWER:* | b, c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. The 4-pin connector is an auxiliary motherboard connector. |
|   | b.  | Correct. Video cards draw a lot of power and newer systems can provide more power than what comes through the PCIe slot. 6-pin configurations are common. |
|   | c.  | Correct. Video cards draw a lot of power and newer systems can provide more power than what comes through the PCIe slot. 8-pin configurations are common. |
|   | d.  | Incorrect. There is no 8+1-pin connector for power. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:07 AM |
| *DATE MODIFIED:* | 6/21/2019 11:08 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7. What are two resources that may be useful in disassembling a laptop computer?

|  |  |  |
| --- | --- | --- |
|   | a.  | Service manual |
|   | b.  | Part brochures |
|   | c.  | User manual |
|   | d.  | Diagnostic software |

|  |  |
| --- | --- |
| *ANSWER:* | a, c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. Since laptop computers are unique to manufacturers and models, a service manual will be useful for disassembly. |
|   | b.  | Incorrect. Part brochures may help provide information about specific parts but may not be helpful disassembling a laptop computer |
|   | c.  | Correct. User manuals may provide guidance on replacing or removing components without full disassembly of the case. |
|   | d.  | Incorrect. Diagnostic software will help troubleshoot computer issues but may not be helpful when disassembling a laptop computer. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:08 AM |
| *DATE MODIFIED:* | 7/10/2019 9:28 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8. What two devices in a computer should be considered “black boxes,” and should never be opened due to risks involving charged capacitors?

|  |  |  |
| --- | --- | --- |
|   | a.  | Monitor |
|   | b.  | Power supply |
|   | c.  | Hard drive |
|   | d.  | Video card  |

|  |  |
| --- | --- |
| *ANSWER:* | a, b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. A monitor may have charged capacitors and contain enough power to kill you, so you should never open it unless you have been specifically trained. This is why it is referred to as a “black box.” |
|   | b.  | Correct. The power supply may have charged capacitors and contain enough power to kill you, so you should never open it unless you have been specifically trained. This is why it is referred to as a “black box.” |
|   | c.  | Incorrect. Hard drives should never be opened due to static and fragile parts. |
|   | d.  | Incorrect. Video cards should never be opened due to static and fragile parts. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Response |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:09 AM |
| *DATE MODIFIED:* | 7/10/2019 9:29 AM |

 |

|  |
| --- |
| **Multiple Choice** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9. A user called to inform you that the laptop she purchased yesterday is malfunctioning and will not connect to her wireless network. You personally checked to verify that the wireless worked properly before the user left your office. The user states she rebooted the computer several times but the problem still persists. Which of the following is the first step you should take to assist the user in resolving this issue?

|  |  |  |
| --- | --- | --- |
|   | a.  | Inform the user she will need to return the laptop so you can replace the internal Wi-Fi card and verify wireless functionality. |
|   | b.  | Have the user press the appropriate function key combination to enable the wireless radio and then attempt to connect to the wireless network. |
|   | c.  | Instruct the user on how to reseat the internal mini-PCIe wireless adapter and try to connect to the wireless network. |
|   | d.  | Ask the user to turn on the laptop’s airplane mode and attempt to reconnect to the wireless network. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. Although it is possible that the wireless card has failed, replacing the Wi-Fi card is not the first step in attempting to resolve the issue. You should always try the simple things first. |
|   | b.  | Correct. Modern laptop computers provide an easy method of toggling the Wi-Fi, GPS, and cellular radios on and off by means of the keyboard function keys. For example, to toggle the Wi-Fi radio on/off, the user may be required to depress and hold the Fn key and then press F5. |
|   | c.  | Incorrect. Most modern laptops use mini-PCIe internal wireless adapters. Reseating this adapter typically involves either removing an access cover on the bottom of the laptop or removing the bottom cover. The card may need to be reset in the slot; however, this is not the first step in attempting to resolve this issue. |
|   | d.  | Incorrect. When airplane mode is turned on, all wireless radio functionality, including Wi-Fi, cellular, and Bluetooth, are turned off. Most modern devices allow the user to turn each of these wireless technologies on and off independently. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 4/22/2019 12:42 AM |
| *DATE MODIFIED:* | 5/16/2019 10:17 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. You are troubleshooting a laptop with multiple sticking keys that result in misspelled words while the user types. Other than several sticking keys, the laptop appears to be functioning properly. You have cleaned the keyboard with compressed air, but the problem persists. After removing one of the key tops, it becomes apparent that a liquid was spilled into the keyboard. Which of the following is the next step in resolving the issue of sticking keys?

|  |  |  |
| --- | --- | --- |
|   | a.  | Replace the keyboard with a compatible keyboard. |
|   | b.  | Disconnect and reseat the keyboard ribbon cable. |
|   | c.  | Clean the keyboard keys with a contact cleaner. |
|   | d.  | Replace the laptop system board and reseat all connections. |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. Replacing the keyboard may be the only option; however, for spills you can first try to use a contact cleaner on the keyboard’s keys and contacts. |
|   | b.  | Incorrect. Reseating the keyboard ribbon cable can be an effective fix when the contacts become corroded or oxidized. Corrosion or oxidation will usually exhibit intermittent connectivity problems. The question states there was obvious evidence of a spill into the keyboard, which will require the keys on the keyboard to be cleaned with a contact cleaner or similar product. |
|   | c.  | Correct. Contact cleaner can be used to clean a keyboard in which liquid has been spilled. Contact cleaners readily evaporate without leaving any residue. If the keys continue to stick, you will need to replace the keyboard. |
|   | d.  | Incorrect. A system board replacement would be an option if the amount of liquid were sufficient enough to leak from the keyboard down to the system board. The question states that other than sticking keys, the system functions properly. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 4/22/2019 1:09 AM |
| *DATE MODIFIED:* | 5/16/2019 10:18 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11. What is the connector called on a network cable that connects to an Ethernet port?

|  |  |  |
| --- | --- | --- |
|   | a.  | RJ-11 |
|   | b.  | RJ-45 |
|   | c.  | DB9 |
|   | d.  | USB |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. A RJ-11 connector connects a phone cable to a dial-up port. |
|   | b.  | Correct. A RJ-45 connector connects a network cable to a network port. |
|   | c.  | Incorrect. A DB9 connector connects to a serial port. |
|   | d.  | Incorrect. A USB (universal serial bus) connector connects to a USB ports. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:38 AM |
| *DATE MODIFIED:* | 6/21/2019 9:39 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12. Which statement is NOT true regarding motherboards?

|  |  |  |
| --- | --- | --- |
|   | a.  | Has a CPU socket |
|   | b.  | Has slots for DIMMs |
|   | c.  | Has a heat sink on the PCIe slots |
|   | d.  | Also called a system board |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. Motherboards have CPU sockets. CPU sockets hold the processor or CPU. |
|   | b.  | Incorrect. Motherboards have DIMMs. DIMM or dual inline memory module slots hold the temporary memory or RAM. |
|   | c.  | Correct. PCIe slots do not have heat sinks. PCIe slots are for expansion cards. If an expansion card requires additional cooling, then the expansion card may contain a heat sink. Heat sinks may be found on top of the CPU with a cooling fan. |
|   | d.  | Incorrect. Motherboards are also called the main board, the system board, or the mobo. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:42 AM |
| *DATE MODIFIED:* | 6/21/2019 9:43 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13. What is the component called that usually has a dual-voltage selector switch and has cables that connect to the motherboard and internal components?

|  |  |  |
| --- | --- | --- |
|   | a.  | PCIe |
|   | b.  | HDD |
|   | c.  | DIMM |
|   | d.  | PSU  |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. PCIe, also known as Peripheral Component Interconnect Express, is the standard for computer expansion cards. PCIe does not have a voltage selector and PCIe cards connect directly to the motherboard through the PCIe slot. PCIe connections do not generally connect to other internal components except the power supply if additional power is needed. |
|   | b.  | Incorrect. HDD or a hard disk drive is used to hold data and programs. HDDs connect directly to the power supply and the motherboard through cables. HDDs do not connect to other internal components. |
|   | c.  | Incorrect. DIMM or dual inline memory module slots hold the temporary memory or RAM. DIMMS are built into the motherboard. DIMMs do not have cables, nor do they connect to other internal components. |
|   | d.  | Correct. The PSU or Power Supply Unit has a dual voltage switch, for using 115V or 220V and connects to the motherboard, expansion cards, and drives through cables. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:45 AM |
| *DATE MODIFIED:* | 6/21/2019 9:46 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14. How many pins are in the power supply connector that is typically used on most motherboards today?

|  |  |  |
| --- | --- | --- |
|   | a.  | 20-pin |
|   | b.  | 24-pin |
|   | c.  | 8-pin |
|   | d.  | 15-pin  |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. The 20-pin P1 connector is the main motherboard power connector used in early ATX systems. |
|   | b.  | Correct. The 24-pin P1 connector is the main motherboard power connector used today. |
|   | c.  | Incorrect. There are multiple types of 8-pin connectors. All 8-pin connectors from power supplies provide auxiliary or extra power to the processor or expansion cards, such as video cards. |
|   | d.  | Incorrect. The 15-pin SATA power connector is used for SATA drives. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:46 AM |
| *DATE MODIFIED:* | 6/21/2019 9:47 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15. What acronym is another name for static electricity, which can damage chips and destroy motherboards?

|  |  |  |
| --- | --- | --- |
|   | a.  | LCD |
|   | b.  | ESD |
|   | c.  | EMI |
|   | d.  | CRT |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. LCD or liquid crystal display is a type of display technology used in modern computer monitors and other electronic devices. |
|   | b.  | Correct. Electrostatic discharge or ESD is another name for static electricity. ESD can damage chips and destroy circuit boards, including motherboards. |
|   | c.  | Incorrect. EMI or electromagnetic interference is the disruption of the operation of an electronic device when it is located near or in a radio frequency field. The disruption is usually temporary and corrected by moving the device out of the field or range of the field. |
|   | d.  | Incorrect. CRT or cathode ray tube is the technology found in older televisions and computer monitors. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:47 AM |
| *DATE MODIFIED:* | 6/21/2019 9:48 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16. What tool can help discover and report computer errors and conflicts that occur when you first turn on a computer and before the operating system is launched.

|  |  |  |
| --- | --- | --- |
|   | a.  | POST card |
|   | b.  | OS diagnostic programs |
|   | c.  | Power supply tester |
|   | d.  | Service manual  |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. Power On Self Test or POST is a diagnostic program built into a computer to test the hardware components before the computer boots up. A POST card is a specialized card that helps identify and report computer errors and conflicts that occur after you first turn on a computer, but before the operating system launches. Results of the test are displayed as a coded number on the card for reference. |
|   | b.  | Incorrect. OS diagnostic programs are useful for maintaining the operating system’s health, hardware functionality, and overall performance. However, the OS system must be running to use them. |
|   | c.  | Incorrect. A power supply tester can test for power supply issues but does not have the capability to test for issues not related to the power supply, such as defective video cards or faulty RAM. |
|   | d.  | Incorrect. Service manuals are useful, especially for laptops, for the disassembly and reassembly of computers, replacing internal components, and general hardware identification. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:48 AM |
| *DATE MODIFIED:* | 6/21/2019 9:50 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. How many pins are used in a serial port?

|  |  |  |
| --- | --- | --- |
|   | a.  | 15 |
|   | b.  | 9 |
|   | c.  | 6 |
|   | d.  | 25 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. 15-pin ports are called DB15 or VGA ports. VGA ports are used to transmit analog video transmissions. VGA ports have been replaced by a variety of ports, including DVI, HDMI, and DisplayPort that transmit digital video signals. |
|   | b.  | Correct. 9-pin ports are called DB9 or serial ports. Serial ports have been largely replaced by USB ports, but can still be found on routers and other hardware. |
|   | c.  | Incorrect. 6-pin ports can be found on PCIe cards for power and older motherboards for data. 6-pin ports used to transmit data are called PS/2 ports and were primarily used for the keyboard and mouse. |
|   | d.  | Incorrect. 25-pin ports are often called parallel ports or LPT ports. LPT ports were primarily used for printers. 25-pin port interfaces have been replaced by USB ports. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:52 AM |
| *DATE MODIFIED:* | 6/21/2019 9:53 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18. What connector has 4 pins, is used for older IDE drives and some SATA drives, and can provide +5 V and +12 V power outputs?

|  |  |  |
| --- | --- | --- |
|   | a.  | Molex connector  |
|   | b.  | SATA connector |
|   | c.  | PCIe connector |
|   | d.  | P1 connector |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. The Molex connector is a 4-pin connector use for older IDE drives, some newer SATA drives, and extra power to video cards. It can provide +5 V and +12 V power. |
|   | b.  | Incorrect. The SATA connector is a 15-pin connector used for SATA drives. It can provide +3.3 V, +5 V, and +12 V power. |
|   | c.  | Incorrect. The PCIe connector comes in 6, 8, and 6/8-pin connections. These connections provide an extra +12 V power to video cards. |
|   | d.  | Incorrect. The P1 connector may have 20, 24, or 20+4-pins. The P1 connector is the main motherboard power connector. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 9:58 AM |
| *DATE MODIFIED:* | 6/21/2019 9:59 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19. Which statement is NOT a good practice when working inside a computer case?

|  |  |  |
| --- | --- | --- |
|   | a.  | Don’t touch the inside of a computer that is turned on. |
|   | b.  | Don’t touch a microchip with a magnetized screwdriver. |
|   | c.  | Remove loose jewelry. |
|   | d.  | Be sure to hold expansion cards by the edge connectors. |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. You should never touch the inside of a computer that is turned on, unless using a multimeter to measure voltage output. |
|   | b.  | Incorrect. Never touch a microchip with a magnetized screwdriver. |
|   | c.  | Incorrect. It is a good idea to remove loose jewelry that might get caught in cables and components. |
|   | d.  | Correct. You should hold expansion cards by the edges, but never touch the edge connectors or soldered components unless it is absolutely necessary. This helps prevent static electricity and reduces corrosion caused by fingerprints. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 10:58 AM |
| *DATE MODIFIED:* | 7/10/2019 9:26 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20. What is the second step in opening the case of a working computer?

|  |  |  |
| --- | --- | --- |
|   | a.  | Press and hold down the power button for a moment |
|   | b.  | Back up important data |
|   | c.  | Power down the system and unplug it |
|   | d.  | Open the case cover  |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. After powering down and unplugging the system, you should press and hold down the power button for a moment to drain the power supply |
|   | b.  | Incorrect. Before beginning any work on a computer, you should back up important data to prevent accidental loss or corruption. |
|   | c.  | Correct. After backing up important data, you should power down the system and unplug it. |
|   | d.  | Incorrect. Open the case cover only after you have powered down the system, drained any excess power, and have the proper tools. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:00 AM |
| *DATE MODIFIED:* | 6/21/2019 11:01 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21. When is it okay to touch the inside of a computer that is turned on?

|  |  |  |
| --- | --- | --- |
|   | a.  | When disassembling the computer |
|   | b.  | When using a multimeter to measure voltage output |
|   | c.  | When reassembling the computer |
|   | d.  | When a qualified electronics expert or electrician is present |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. Never touch the inside of a computer that is turned on when disassembling it to avoid electrical shock. |
|   | b.  | Correct. Using a multimeter to measure voltage output is the only exception to touching the inside of a computer that is turned on. Even then, you should be very careful to avoid shock. |
|   | c.  | Incorrect. Never touch the inside of a computer that is turned on when reassembling it to avoid electrical shock. |
|   | d.  | Incorrect. Never touch the inside of a computer that is turned on when disassembling it to avoid electrical shock. An electronics expert and an electrician would tell you to not do it. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:03 AM |
| *DATE MODIFIED:* | 6/21/2019 11:04 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. When handling a motherboard, cards, or drive, which statement is NOT accurate?

|  |  |  |
| --- | --- | --- |
|   | a.  | You should not touch chips on the device. |
|   | b.  | You should not hold expansion cards by the edges. |
|   | c.  | You should not touch any soldered components on a card. |
|   | d.  | You should not touch edge connectors. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Incorrect. You should never touch a chip to avoid damaging the chip. |
|   | b.  | Correct. Holding expansion cards by the edges is the correct method of handling. |
|   | c.  | Incorrect. You should never touch soldered components on a card to avoid static and corrosion. |
|   | d.  | Incorrect. You should never touch edge connectors on a card to avoid static, corrosion, or damage unless absolutely necessary. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:04 AM |
| *DATE MODIFIED:* | 6/21/2019 11:05 AM |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23. What is the very first step that should be taken when performing work with a computer?

|  |  |  |
| --- | --- | --- |
|   | a.  | You should back up any important data. |
|   | b.  | You should ground yourself. |
|   | c.  | You should remove the power supply. |
|   | d.  | You should power down the system and unplug it. |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *FEEDBACK:* |

|  |  |  |
| --- | --- | --- |
|   | a.  | Correct. Always back up important data before working with a computer. If you have a problem, you may not be able to recover the data. |
|   | b.  | Incorrect. You should ground yourself to the case to dissipate any static electricity between you and the case after dissipating any remaining electricity in the system. |
|   | c.  | Incorrect. Never remove the power supply without first removing the source of electricity and ensuring any remaining electricity is dissipated. |
|   | d.  | Incorrect. Powering down the system and unplugging it is the second step. |

 |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 11:05 AM |
| *DATE MODIFIED:* | 6/21/2019 11:06 AM |

 |

|  |
| --- |
| **Matching** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Match each item with a statement below.

|  |  |  |  |
| --- | --- | --- | --- |
| a.  | Bluetooth | b.  | POST |
| c.  | PCIe | d.  | microATX |
| e.  | DisplayPort | f.  | CPU (central processing unit) |
| g.  | DIMM | h.  | airplane mode |
| i.  | SO-DIMM | j.  | heat sink |

|  |  |
| --- | --- |
| *QUESTION TYPE:* | Matching |
| *HAS VARIABLES:* | False |
| *DATE CREATED:* | 6/21/2019 10:16 AM |
| *DATE MODIFIED:* | 6/21/2019 10:34 AM |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 24. A diagnostic program built into a computer to test the hardware components before the computer boots up

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 25. All wireless technologies are turned off resulting in no transmission or reception of wireless signals

|  |  |
| --- | --- |
| *ANSWER:* | h |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 26. The smaller form factor of the ATX.  Its smaller size and reduced expansion ports helps reduce costs and power consumption

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 27. Performs most of the processing for data and instructions for the entire system

|  |  |
| --- | --- |
| *ANSWER:* | f |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 28. A short-range wireless technology used to connect two devices in a small personal network

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 29. Smaller connectors for memory on laptops

|  |  |
| --- | --- |
| *ANSWER:* | i |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 30. The standard for computer expansion cards

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 31. The connector for memory found on a motherboard

|  |  |
| --- | --- |
| *ANSWER:* | g |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 32. Draws heat away from the CPU or other heat sensitive components so that it can be dissipated quickly

|  |  |
| --- | --- |
| *ANSWER:* | j |
| *POINTS:* | 1 |

 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 33. Transmits digital video and audio. They are slowly replacing VGA and DVI ports on computers

|  |  |
| --- | --- |
| *ANSWER:* | e |
| *POINTS:* | 1 |

 |