**Solutions for Chapter 1: Taking a Computer Apart and Putting It Back Together**

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1. Lab 1.1 Record Your Work and Make Deliverables
2. Review Questions
3. What are the eight categories in the Category view in Control Panel?

Answer: System and Security; Network and Internet; Hardware and Sound; Programs; User Accounts and Family Safety; Appearance and Personalization; Clock, Language, and Region; Ease of Access

1. What are the four file types that can be used to save a snip using the Windows Snipping Tool?

Answer: PNG, GIF, JPG, and MHT

1. What is the purpose of the Win+S keystroke shortcut in Windows 10?

Answer: In Windows 10, the shortcut opens Cortana, the search feature of Windows 10.

1. Search the web for information about the price of Windows 10. How much would it cost to buy your current edition (such as Home, Professional, etc.) of the Windows 10 operating system as an upgrade from Windows 8?

Answer: $69 to $130 for an upgrade, depending on the edition

1. Lab 1.2 Gather And Record System Information
2. Review Questions
3. List two categories available in Control Panel that were not mentioned in the lab:

Answer: Answers may include:

* Hardware and Sound
* Clock, Language, and Region
* Ease of Access

1. (Windows 7 only) Based on the Windows Experience Index, what component of your computer would you upgrade first? Why?

Answer: Answers may vary based on student experience and might include the processor, RAM, graphics card, or hard drive.

1. Based on what you found while taking inventory of your computer’s system, what maintenance does this computer currently need?

Answer: Answers may vary based on student experience and might include a backup, malware scan, OS updates, securing a network, or software updates.

1. Besides the Computer Inventory and Maintenance form, what other documentation should you keep on each computer? How might you store that information?

Answer: Any documentation that came with the computer, any product guides printed from the web, and any receipts from purchases related to the computer should be kept together near the computer itself, perhaps in a manila envelope or notebook.

1. What differences, if any, are there between a list of components derived from a physical inspection and a list of components derived from Control Panel and System Properties?

Answer: The lists could differ substantially because of such things as BIOS/UEFI upgrades, non-brand-name components, drive partitioning, or components disabled in BIOS/UEFI.

1. Why is it important for IT technicians to keep documentation on computers for which they are responsible?

Answer: Answers may vary depending on student experiences. Documentation can be useful when a computer is lost or stolen, the hard drive has failed, Windows becomes corrupted, or other problems arise. A user might accidentally change a setting or forget a password.

1. Lab 1.3 Identify Computer Parts
2. Review Questions
3. How did you decide which expansion card was the video card?

Answer: This answer is dependent on student research and experience. The ports on the rear of an expansion card are generally used to identify the purpose of the card.

1. How did you identify the type of CPU you have?

Answer: This answer is dependent on student research and experience.

1. Does your system have much room for adding new components? What types of expansion slots are available for adding new cards?

Answer: This answer is dependent on student research and experience.

1. Is there space for upgrading the RAM? If there isn’t, what could you do instead to upgrade?

Answer: This answer is dependent on student research and experience. An old smaller module can be replaced by a new module that holds more RAM.

1. Where (specifically) would you go on the Internet to download a PDF of the motherboard manual or system manual? What information would you need to identify which manual to download?

Answer: Answers may vary but will most likely include the manufacturer’s website. The motherboard’s make and model number are required, although some systems can also be identified by a unique service tag.

1. Lab 1.4 Identify Form Factors
2. Review Questions
3. Why is it important that your case and motherboard share a compatible form factor?

Answer: It allows the components to fit together and function properly.

1. When might you want to use a slimline form factor?

Answer: You might want to use it when a thinner profile is required, such as with a media center under a TV.

1. What advantages does ATX have over microATX?

Answer: Answers can include more expansion slots and better heat dissipation.

1. What are two operating systems that can be installed in systems using a Mini-ITX motherboard?

Answer: Mini-ITX motherboards can support either Microsoft or Linux operating systems.

1. Is it possible to determine the form factor without opening the case?

Answer: Yes, the form factor can usually be determined by the shape of the case.

1. Lab 1.5 Take a Computer Apart and Put It Back Together
2. Review Questions
3. When removing the cover, why should you take care to remove only the screws that hold the cover on?

Answer: The power supply retention screws are often accessible from the outside of the case; if they are removed from the power supply, the screws could damage other components by falling on them.

1. How should you rock a card to remove it from its slot? Why is it important to know how to rock a card correctly?

Answer: Rock the card lengthwise. If you rock the wrong way, you could damage the card or slot.

1. What should you do to help you remember which components connect to which cables?

Answer: Take notes, make a sketch, take a photo, attach labels, and so forth.

1. What marking on a ribbon cable identifies pin 1?

Answer: A colored stripe on one side of the cable identifies pin 1.

1. What component(s) defines the system’s form factor?

Answer: Answers may vary and might include the power supply, the backplate, the spacing of the mounts for the motherboard, the size of the motherboard, and the position of the expansion slots in relation to the CPU.

1. What form factor does your computer use?

Answer: The answer is based on the actual system being used.

1. Why would an IT technician ever have to change out a computer’s motherboard?

Answer: The motherboard might need replacing if it becomes damaged, such as when a trace on the board or a chip is damaged. Also, the board might need replacing when the CPU is upgraded or additional features are needed. For example, the motherboard could be upgraded to support DDR4 memory.

1. Lab 1.6: Investigate Computer Teardown Procedures
2. Review Questions
3. What are three notable characteristics of the system shown in the first video you selected? For example, was this an older or newer system? How can you tell? Who is the manufacturer of the system, the case, and/or the components? What drives or other optional components were included in the system?

Answer: Answers will vary, depending on student experience.

1. What tools did the technician use in each video? What additional tools would you recommend having on hand to take apart and reassemble a computer?

Answer: Answers will vary, depending on student experience. Possible tools include a screwdriver, ESD strap, tweezers, pliers, a multimeter, zip ties, and a flashlight.

1. Which two components of a computer should be treated as “black boxes” and not opened without specialized training?

Answer: The power supply and the monitor

1. What are two methods for keeping track of screws during disassembly so that reassembly goes more smoothly?

Answer: Answers may vary. Two possible answers include:

* Keep screws and spacers in small cups or a tray.
* Tape screws to a piece of paper and label them on the paper.

1. Lab 1.7 Compare Laptops and Desktops
2. Review Questions
3. What are the two most important criteria when deciding which computer to buy?

Answer: How the computer will be used and the price

1. Why do laptop computers cost more than desktop computers?

Answer: Laptop components must be small and weigh less, yet they must have the same power as desktop components. Laptop components must also be durable enough to withstand movement and jostling while the computer is in use.

1. List three reasons why it is easier to upgrade a desktop computer than a laptop computer.

Answer: Answers may vary and might include:

* Because the desktop has more room in the case for expansion
* Because desktop components are not proprietary, as are many laptop components
* Because disassembling a laptop is more difficult than disassembling a desktop computer

1. Other than price, what factors might someone consider when deciding whether to buy a Windows laptop or a macOS laptop?

Answer: Answers may vary and might include:

* Applications software availability
* User experience
* Ease of sharing data files with users of other computers

1. In this lab, was it easier comparing a desktop computer to a laptop, or comparing a Windows laptop to a macOS laptop? Explain your answer.

Answer: Answers will vary depending on student experience.