Lab – Research Laptop Batteries (Instructor Version)

**Instructor Note**: Red font color or gray highlights indicate text that appears in the instructor copy only.

In this lab, you will use the Internet or a local store to gather information and then record the specifications for a laptop battery.

**Instructor Note**: You may choose another laptop battery to research. The answers below are specific to the Lenovo P51s.

Laptop batteries are removable, rechargeable Lithium ion battery packs. Most laptop batteries are available in 6, 9 or 12 cell versions. The more cells in the battery pack, the longer the battery charge will last. Lithium ion batteries should not be allowed to fully discharge because this will reduce their battery life. They should be regularly charged. For safety reasons do not leave a battery charger close to flammable materials and be sure there is plenty ventilation around the charger. It is also a good idea to not leave a battery unattended during charging. Because different battery types require different charging regimes, you should always consult manufacturer's instructions for maintaining optimal battery life.

When replacing or installing a laptop battery the laptop should be turned off and the power cable disconnected from the AC power source. Most laptops have latches on the back or bottom of the cassis that released to remove the battery. Make sure latches are fully engaged after installing a battery.

* 1. List the specifications for a laptop battery. Please ask your instructor for the laptop model to research.

Type your answers here.

The battery included with the ThinkPad P51s is a standard 3-Cell Lithium Ion rechargeable battery.

Li-ion 3-Cell External Battery Pack (11.40 - 11.55V / 2.08 – 2.10 Ah) P/N: 4X50M08810

Li-ion 6-Cell External Battery Pack (10.8V / 4.8AH) P/N: 4X50M08812

Manufacturer: Lenovo

Depending on usage, the 3-cell external and 4-cell internal batteries will operate approximately up to 13.5 hours. For the 6-cell external and 4-cell internal batteries will operate approximately up to 26.4 hours. Depending on your laptop model, you can buy an extended life 6 or 9-Cell battery.

* 1. Shop around and in the table below list the features and cost for a generic and a laptop battery from the manufacturer of the laptop.

| Battery Specifications | Generic | Manufacturer |
| --- | --- | --- |
| Output voltage | 10.8 V | 10.8 V – 11.25 V |
| Battery cell configuration  ex: 6-Cell, 9-Cell | 3-Cell or 6-Cell | 3-Cell (61)  6-Cell (61++) |
| Dimensions | 3- Cell: 264 mm (10.4 in) x 53 mm (2.1 in) x 107 mm(4.2 in)  6-Cell: 265 mm (10.43 in) x 110 mm (4.33 in) x 50 mmm (1.97 in) | 3- Cell: 264 mm (10.4 in) x 53 mm (2.1 in) x 107 mm (4.2 in)  6-Cell: 265 mm (10.43 in) x 110 mm (4.33 in) x 50 mmm (1.97 in) |
| Hours of life |  | 2.5 hours for 3-Cell  5.5 hours for 6-Cell |
| Approximate cost | ~ $50 for 3-Cell  ~ $90 for 6-Cell | $110 for 3-Cell  $118 for 6-Cell |

* 1. Based on your research, which battery would you select? Be prepared to discuss your decisions regarding the battery you select.

Type your answers here.

Student may choose an extended life battery if available, but must be prepared to explain the decision.

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