

Name: _____

Period: _____ Seat #: _____

Date: _____

Computer Lab, Lead-Acid Batteries

Chapter 21, Electrochemistry, written by Dan Fox, last updated 03/21/04

Go to www.batterycouncil.org, click on Lead Acid Batteries and answer these questions. Copy the answers into the body of the text, and also onto this answer sheet for grading. Copy the words in the blanks only.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

Introduction Page Starting batteries deliver a (1) _____ of _____ to start the engine.

Deep-cycle batteries (found on boats or campers) deliver a (2) _____ of power for a _____ than a starting battery.

How a Battery Is Made

Batteries are made of five basic components:

A resilient plastic (3) _____.

Positive and negative (4) _____ made of _____.

Plate separators made of (5) _____.

(6) _____, a dilute solution of _____ and water better known as battery acid.

(7) _____, the connection point between the battery and whatever it powers.

Most automotive battery containers and their covers are made of (8) _____.

For a typical 12-volt car battery, the case is divided into six (9) _____, or cells.

The grids or (10) _____ are made of _____ or an alloy of it.

A paste mixture of lead oxide, sulfuric acid and water is applied to the grids. Expander material of powdered (11) _____ is added to the paste to produce negative plates.

Separators are thin sheets of (12) _____, _____ material used as spacers between the positive and negative plates.

Fine pores in the separators allow (13) _____ to flow between the plates while preventing short circuits.

In the next step, a positive plate is paired with a negative plate and a (14) _____. This unit is called an _____, and there is one element per battery cell, or compartment in the container. Elements are dropped into the cells in the battery case. The cells are connected with a metal that conducts electricity. The (15) _____, or posts, are welded on.

The final step is (16) _____, or finishing. During this step, the battery terminals are connected to a _____ of _____ and the battery is charged for many hours. When the battery is fully charged, it moves to another line where the case is cleaned, if necessary, and the labels are attached.

Jump Start a Battery

If the battery is (17) _____, not dead, you can jump-start it from another fully charged battery. About 30 minutes of driving should allow the (18) _____ to charge your _____ until you take it to a service station for a full _____.

But if the alternator or another part of the electrical system in your car is damaged, they won't be able to (19) _____. So if your battery keeps discharging, before you replace it, have your (20) _____ checked. What looks like a bad battery could be an electrical system problem. If you have a bad component in the electrical system, it will keep draining a new battery, and you'll be stranded again and again.