

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Instructor: \_\_\_\_\_ Period: \_\_\_\_\_

# 30

## Battery Testing & Service



**Objective:** After studying this chapter, you will be able to summarize the most common methods for testing and service.

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### **Battery Maintenance**

- List the five (5) primary steps in maintaining an automotive battery:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- When working on or around automotive batteries, when is it safe to **not** wear safety glasses? \_\_\_\_\_
- What is the **best** solution to correctly wash an automobile battery? \_\_\_\_\_
- Describe a **battery-terminal test**: \_\_\_\_\_  
\_\_\_\_\_
- Describe the **best** method to prevent battery terminal corrosion: \_\_\_\_\_  
\_\_\_\_\_
- What is the purpose of an automotive **memory saver**? \_\_\_\_\_  
\_\_\_\_\_
- Hydrogen gas is both colorless and odorless, but it is also extremely \_\_\_\_\_ and \_\_\_\_\_.
- If the cells of a maintenance-type battery are low, the correct refill liquid is \_\_\_\_\_.
- The density of a liquid can be checked by using a \_\_\_\_\_.
- For automotive batteries, \_\_\_\_\_ also indicates state of charge of the battery.
- A battery with a specific gravity (**s.g.**) of **1.265** has a **higher** or **lower** state of charge than a battery with a specific gravity of **1.250**. \_\_\_\_\_.
- What is the battery's condition if the hydrometer readings vary 25 or more points between cells? \_\_\_\_\_
- Describe how to check a battery's condition using a DVOM: \_\_\_\_\_  
\_\_\_\_\_
- What is the purpose of a battery **cell voltage** test? \_\_\_\_\_

15. What will a **battery drain test** tell us? \_\_\_\_\_
16. A nominal parasitic loss is less than \_\_\_\_\_ amps.
17. A battery charger transforms \_\_\_\_\_ voltage into \_\_\_\_\_ voltage.
18. When is the correct and safe time to charge a **frozen** battery? \_\_\_\_\_
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### **Jump Starting**

19. What is the correct order of connection when jumping one battery to another? \_\_\_\_\_  
\_\_\_\_\_
20. What will happen if the polarity is reversed when attaching jumper cables? \_\_\_\_\_  
\_\_\_\_\_
21. A portable battery-pack is a safer and easier method to jump-starting a vehicle.  
True or False \_\_\_\_\_
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### **Battery Load Test**

22. A battery load test checks the battery under full \_\_\_\_\_ load.
23. Most modern load testers have \_\_\_\_\_ type ammeter connection leads.
24. During load testing, the automatic testers subject the battery to \_\_\_\_\_  
times the battery's rating.
25. What is the correct amp load to test a 110 amp-hour battery? \_\_\_\_\_
26. Most modern battery's use the **S.A.E.** rating of \_\_\_\_\_ .
27. If a 12 volt automotive battery shows \_\_\_\_\_ or more during load testing, the  
battery is in good condition.
28. A **3 minute quick test** will determine if a battery is \_\_\_\_\_ and no longer  
serviceable.
29. If all the battery tests are good, what are some other areas to inspect for charging  
system problems? \_\_\_\_\_
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### **Battery Replacement**

30. What are the first items to be removed when replacing a battery? \_\_\_\_\_
31. Along with safety glasses, a technician should use a battery \_\_\_\_\_ or \_\_\_\_\_  
when lifting out and servicing automotive batteries.
32. List four (4) requirements when selecting a replacement battery:
- A. \_\_\_\_\_
  - B. \_\_\_\_\_
  - C. \_\_\_\_\_
  - D. \_\_\_\_\_