**BATTERY OPEN-BOOK QUIZ NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DIRECTIONS: Please work through this quiz individually. You can refer to the battery PowerPoint slideshow on the website to help with some of the questions below.**

**1. The two main functions of a battery are:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**2. Please describe what the alternator’s purpose is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3. How many cells make up a twelve volt battery? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4. What is the voltage of each of the cells in a twelve volt battery? Circle the correct answer.**

 **1.5 volts 2.5 volts 1.2 volts 2.1volts 3 volts**

**5. Given the answer from the above question, calculate what voltage a fully charged battery should have. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**6. Batteries convert \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Pick the two correct word options from the word bank below.**

 **Solar Kinetic Chemical Wind Electrical**

**7. Circle TRUE or FALSE: Batteries have acid in them, and it is mandatory to wear safety glasses when handling batteries in any manner.**

**8. After charging a battery, it could be filled with explosive gas. What type of gas is this? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**9. What is one type of test we can perform on a battery to ensure that it is functioning properly? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**10. Corrosion can be stopped and neutralized with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Pick the two correct word options from the work bank below.**

 **Baking Soda Baby Powder Coca-Cola**

 **Baking Powder Battery Cleaner**

**11. Hot water is a quick and easy way to remove pre-existing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the top of the battery terminals.**

**12. Battery tops need to be dry or else what will happen? Circle the correct answers.**

 **a) Voltage leak across terminals b) Battery will slowly discharge**

 **c) Nothing, battery will function normally**

 **d) Battery will explode e) Acid leakage over time**

**13. To show an understanding of how to properly disconnect and connect a battery, please circle the correct procedure.**

 **a) PNPN**

 **b) NPNP**

 **c) PPNN**

 **d) NNPP**

 **e) NPPN**

 **f) All of the above are correct and safe to do**

**14. Describe what the proper steps are for jumpstarting a vehicle. (Where do the jumper cables get connected? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Why is it important to know the proper procedure for this? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**BONUS QUESTION!**

**How many double AA batteries are in an “insane car battery hack”?**

**(Hint: Anyone seen the YouTube video?)**

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**What two other things can you sometimes find in the “insane car battery hack”?**

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