

KNOWLEDGE PROBE 2: PORTABLE POWER TECHNOLOGY

Common Battery Types

Learning Objectives

1. Identify battery specifications for various types of batteries.
 2. Identify batteries as either primary or secondary.
 3. Determine which batteries are used for different applications.
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1. The most widely used primary cell is the
 - a. Alkaline
 - b. Lead acid
 - c. Silver oxide
 - d. Zinc-air
 2. What is the working voltage of AAA, AA, C, and D alkaline cells?
 - a. 1.0 volts
 - b. 1.2 volts
 - c. 1.5 volts
 - d. 2.1 volts
 3. What is the working voltage of a lead acid cell?
 - a. 1.0 volts
 - b. 1.2 volts
 - c. 1.5 volts
 - d. 2.1 volts
 4. Which of the following is NOT a secondary cell?
 - a. Lead acid
 - b. Lithium ion
 - c. Nickel-cadmium
 - d. Zinc-air
 5. What cell has the highest output voltage?
 - a. Lead acid
 - b. Lithium ion
 - c. Nickel-cadmium
 - d. Zinc-air
 6. What cell has the greatest Ah capability?
 - a. Lead acid
 - b. Lithium ion
 - c. Nickel-cadmium
 - d. Nickel metal hydride



7. What primary cell has the greatest output voltage and best energy density?
 - a. Alkaline
 - b. Lithium ion
 - c. Lithium manganese dioxide
 - d. Zinc-air
8. What secondary battery has the greatest energy density?
 - a. Lead acid
 - b. Lithium ion
 - c. Nickel-cadmium
 - d. Nickel metal hydride
9. What battery type exhibits the undesirable “memory” effect?
 - a. Lead acid
 - b. Lithium ion
 - c. Nickel-cadmium
 - d. Nickel metal hydride
10. Alkaline cells may be successfully recharged.
 - a. True
 - b. False
11. Which of the following is used in hearing aids?
 - a. Alkaline
 - b. Lithium manganese dioxide
 - c. Nickel-cadmium
 - d. Zinc-air
12. NiCd and Lithium-ion batteries are available in AAA, AA, C, and D packages.
 - a. True
 - b. False
13. What is the main reason for the coming change from 12 volt to 42 volt car batteries?
 - a. 12 volt batteries are gradually being phased out
 - b. 42 volts batteries will last longer
 - c. Cars are using more and more electrical/electronic equipment and more power is needed
 - d. Electric cars are becoming more common
14. What is the maximum power expected to be available in 42 volt auto systems?
 - a. 1 kW
 - b. 3 kW
 - c. 5 kW
 - d. 9 kW



15. You can be shocked by a 42 volt battery.
- a. True
 - b. False