

Automotive Electrical and Engine Performance 9th Edition
Chapter 12 – Batteries and Battery Testing and Service
Multiple Choice Questions Quiz A

1. What is the primary function of a battery's electrolyte?
 - a) To act as a voltage stabilizer
 - b) To transfer ions between plates, enabling chemical reactions for current flow
 - c) To prevent sulfation in the battery plates
 - d) To keep the battery case at a constant temperature

2. Technician A says an AGM (Absorbed Glass Mat) battery is spill-proof and can be mounted in various positions. Technician B says that AGM batteries require a standard automotive charger. Who is correct?
 - a) Technician A only
 - b) Technician B only
 - c) Both Technicians A and B
 - d) Neither Technician A nor B

3. The specific gravity of a fully charged lead-acid battery is typically closest to:
 - a) 1.155
 - b) 1.225
 - c) 1.265
 - d) 1.120

4. What is the purpose of a battery load test?
 - a) To measure the electrolyte level
 - b) To assess the battery's capacity to maintain voltage under a specified load
 - c) To check for corrosion on terminals
 - d) To determine the alternator's output capacity

5. What does a specific gravity reading below 1.120 indicate about a battery's charge state?
- a) The battery is overcharged
 - b) The battery is fully charged
 - c) The battery is discharged
 - d) The electrolyte is contaminated
6. During charging, a lead-acid battery's plates undergo which of the following changes?
- a) Lead sulfate forms on both plates
 - b) Lead dioxide reverts to lead, and lead sulfate returns to sulfate ions in the electrolyte
 - c) Sulfuric acid is transformed into hydrogen and oxygen
 - d) Water decomposes to form lead peroxide
7. The cold-cranking amperes (CCA) rating of a battery represents:
- a) The number of amps a battery can deliver at 0°F (-18°C) for 30 seconds while maintaining a voltage of at least 7.2 volts
 - b) The maximum reserve capacity of the battery
 - c) The battery's lifespan in extreme temperatures
 - d) The peak amperage a battery can supply for 10 seconds at room temperature
8. If a battery fails a load test, what should be done next?
- a) Charge the battery and retest
 - b) Replace the battery immediately
 - c) Perform a conductance test
 - d) Inspect the alternator output

9. In a flooded lead-acid battery, what component prevents shorts between positive and negative plates?

- a) The sediment chamber
- b) The cell partitions
- c) The separators
- d) The electrolyte

10. The Battery Council International (BCI) sets standardized measurements for:

- a) The specific gravity of battery electrolytes
- b) The voltage requirements for all automotive batteries
- c) Battery dimensions and group sizes
- d) Battery test procedures

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Answer Key Quiz A

Correct Answers:

1. b
2. a
3. c
4. b
5. c
6. b
7. a
8. a
9. c
10. c