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

1. What is the main purpose of an automotive battery?

a) To store current for emergency use

b) To power the alternator during charging

c) To monitor voltage levels in the electrical system

d) To supply current to start the engine and stabilize the electrical system

2. What material is typically used to construct the grids in automotive batteries?

a) Pure lead with antimony or calcium additives

b) Aluminum for lightweight durability

c) Copper for high conductivity

d) Nickel for corrosion resistance

3. What does the term "cold-cranking amperes (CCA)" represent in battery ratings?

a) The voltage drop during a high-rate discharge test

b) The number of minutes a battery can provide 25 amperes

c) The amperage available at 32°F (0°C)

d) The maximum current the battery can deliver at -18°C (0°F) for 30 seconds

4. What is the function of separators in a battery?

a) To isolate the cells to prevent voltage loss

b) To insulate and separate positive and negative plates

c) To increase the battery's reserve capacity

d) To reduce the amount of electrolyte required

5. Which type of battery is specifically designed for vehicles with start-stop systems?

a) Enhanced Flooded Battery (EFB)

b) Flooded Lead Acid (FLA) Battery

c) Absorbed Glass Mat (AGM) Battery

d) Nickel-Metal Hydride (NiMH) Battery

6. What chemical reaction occurs during the discharge of a lead-acid battery?

a) Lead dioxide reacts with sulfuric acid to form lead sulfate and water

b) Lead combines with oxygen to form lead oxide

c) Sulfuric acid is converted directly into hydrogen gas

d) The electrolyte becomes more acidic as discharge progresses

7. Why is it important to secure a battery with a hold-down bracket?

a) To ensure proper ventilation during charging

b) To prevent vibration-induced damage to internal plates

c) To reduce parasitic draw from the electrical system

d) To maintain consistent electrolyte levels

8. Which tool is commonly used to test a battery's state of charge by measuring specific gravity?

a) Hydrometer

b) Multimeter

c) Conductance tester

d) Clamp-on ammeter

9. What is the purpose of a float-type charger?

a) To apply a small, continuous charge regardless of battery condition

b) To monitor the battery and charge only when needed

c) To rapidly charge the battery in under one hour

d) To balance electrolyte levels during charging

10. What should be done to remove a surface charge before testing a battery?

a) Drive the vehicle for at least 10 minutes

b) Leave the battery disconnected for 30 minutes

c) Turn on the headlights for 1 minute, then turn them off

d) Perform a high-rate discharge test for 15 seconds

Automotive Electrical and Engine Performance 9th Edition
Chapter 12 – Batteries and Battery Testing and Service
Answer Key Quiz B

Correct Answers:

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