TERREPOWER
formerly BBB Industries

29627 Renaissance Blvd.
Daphne, Alabama 36526
Phone: 251-438-2737
Fax: 251-438-2828
www.terrepower.com

LMS: Starter Electrical Systems – Breakdown Quiz

1. What fundamental principle allows a starter motor to operate?
A. Hydraulic pressure
B. Magnetism (lines of flux)
C. Air compression
D. Fuel injection
Correct Answer: B. Magnetism (lines of flux)
Explanation: Starter motors operate using electromagnetic fields that push and pull components to create rotation.

2. What happens when current flows through a conductor in a magnetic field?
A. It cools down
B. It produces light
C. It moves due to magnetic force
D. It stops conducting
Correct Answer: C. It moves due to magnetic force
Explanation: The interaction between current and magnetic fields creates movement (motor action).

3. What component in a starter motor helps reverse current flow for continuous rotation?
A. Relay
B. Commutator
C. Battery
D. Fuse
Correct Answer: B. Commutator
Explanation: The commutator switches current direction, allowing continuous push/pull motion.

4. What is the role of the starter armature?
A. Store fuel
B. Rotate and create motion
C. Regulate voltage
D. Control ignition timing
Correct Answer: B. Rotate and create motion
Explanation: The armature rotates within the magnetic field to produce mechanical power.

5. What is the main difference between a field coil starter and a permanent magnet starter?
A. Permanent magnet starters use more fuel
B. Field coil starters are smaller
C. Permanent magnet starters use less amperage
D. Field coil starters don't rotate
Correct Answer: C. Permanent magnet starters use less amperage
Explanation: Permanent magnets eliminate the need for field coils, reducing current draw.

6. What advantage does a gear reduction starter provide?
A. Higher speed with less torque
B. More torque with less amperage
C. Eliminates battery usage
D. Reduces engine compression
Correct Answer: B. More torque with less amperage
Explanation: Gear reduction multiplies torque while reducing electrical demand.

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7. What is the function of a starter solenoid?
A. Increase fuel pressure
B. Convert AC to DC
C. Control a high-amperage circuit using a low-amperage signal
D. Cool the starter motor
Correct Answer: C. Control a high-amperage circuit using a low-amperage signal
Explanation: The solenoid acts as a switch, allowing high current flow to the starter.

8. What are the two critical voltage points needed for starter operation?
A. Fuel pump and injector
B. Ground and ignition coil
C. BAT terminal and START terminal
D. Sensor and ECU
Correct Answer: C. BAT terminal and START terminal
Explanation: The starter must have constant battery voltage and a start signal to operate.

9. What determines whether a modern vehicle allows the starter to engage?
A. Tire pressure
B. Engine temperature only
C. Enable criteria (park/neutral, anti-theft, etc.)
D. Fuel level
Correct Answer: C. Enable criteria
Explanation: Modern systems rely on modules (PCM/BCM) and conditions before allowing starter engagement.

10. If voltage is missing at the START terminal, what should you do?
A. Replace the starter immediately
B. Add fuel
C. Trace the circuit back to find where voltage is lost
D. Replace the engine
Correct Answer: C. Trace the circuit back
Explanation: Diagnosing where voltage stops helps identify faulty switches, relays, or modules.