SECTION A6 — ELECTRICAL/ELECTRONIC SYSTEMS PRACTICE EXAMS

The seven full-length simulation exams in Section A6 cover the ASE A6 Electrical/Electronic Systems certification. Each exam contains fifty multiple-choice questions delivered in the exact format the live A6 test uses, with the same domain weighting that ASE specifies for the current version of the test:

- **General Electrical/Electronic System Diagnosis** — 13 questions per exam (26 percent)
- **Battery and Starting System Diagnosis and Repair** — 8 questions per exam (16 percent)
- **Charging System Diagnosis and Repair** — 5 questions per exam (10 percent)
- **Lighting System Diagnosis and Repair** — 6 questions per exam (12 percent)
- **Instrument Cluster, Driver Information, and Body Electrical Systems Diagnosis and Repair** — 4 questions per exam (8 percent)
- **Body Electrical and Accessories Diagnosis and Repair** — 14 questions per exam (28 percent)

A6 stands apart from other ASE A-series tests because it is the most diagnostic-skill-intensive certification in the series. The technician who passes A6 must be deeply skilled in electrical theory (Ohm's Law, Kirchhoff's Laws, series and parallel circuits, voltage drop), digital multimeter usage, oscilloscope interpretation, scan tool diagnosis, wiring schematic reading, and the troubleshooting logic that isolates faults in complex modern electrical systems. Unlike mechanical systems where wear progresses visibly, electrical faults are often invisible and require systematic diagnostic approach to identify.

The defining characteristic of the A6 exam is that **general electrical diagnosis** is the foundation of everything else on the test. Twenty-six percent of the test directly involves general diagnostic skills — multimeter usage, voltage drop testing, schematic reading, and logical fault isolation. The technician who masters these foundational skills can then apply them to the specific system domains. The candidate who lacks foundational electrical understanding will struggle with all subsequent A6 content regardless of how well they know specific systems.

A second defining characteristic is that **body electrical and accessories** is the largest single domain at twenty-eight percent. Fourteen questions per exam directly involve the wide variety of body electrical systems on modern vehicles: power windows, power locks, power seats, power mirrors, sunroofs, keyless entry, remote start, security systems, audio systems, navigation systems, and the network communication that connects them. Each system has its own diagnostic considerations; the A6-certified technician must navigate them all.

A third defining characteristic is that **battery and starting system diagnosis** carries significant weight at sixteen percent. The technician must understand battery construction and chemistry (lead-acid, AGM, lithium-ion), proper testing procedures (load testing, conductance testing, state-of-charge measurement), starter operation and diagnosis (cranking circuit voltage drop testing, current draw analysis), and the stop-start systems that have become standard on modern vehicles. Eight questions per exam directly involve these systems.

A fourth defining characteristic is that **lighting systems** at twelve percent has expanded to include LED, HID, adaptive lighting, automatic high-beam, and matrix headlight systems on modern vehicles. The technician must be skilled in both traditional incandescent diagnosis and modern LED/HID/adaptive systems, including the modules that control them and the calibrations they require after service. Six questions per exam involve lighting.

A fifth defining characteristic is that **CAN bus and network communication** appears throughout the test, not as a separate domain but woven into multiple domains. Body electrical systems communicate over network protocols. Instrument cluster operation depends on network data. Charging system warning operation involves network communication. The technician must understand how networks distribute information across modules and how network faults manifest as electrical symptoms.

A sixth defining characteristic is that **instrument cluster and driver information** at eight percent reflects the modern integration of cluster displays with vehicle systems. Digital instrument clusters, head-up displays, infotainment systems, and the driver information they present all appear regularly on the test. The technician who understands only traditional gauge clusters will miss modern A6 content.

The exams in this section progress from foundational diagnostic skills in early exams to integrated multi-domain scenarios in later exams. Early exams focus on individual systems — battery diagnostics, starting circuit diagnosis, charging system testing, simple lighting circuits. Middle exams introduce comparative diagnosis and network communication faults. Later exams concentrate on complex scenarios where multiple electrical systems interact across CAN bus networks.

Total practice questions in Section A6: **350 questions** across 7 simulation exams.

Set a timer for ninety minutes when taking each exam, work through the questions without referencing notes, and resist the temptation to peek at the answer key until you have submitted your final answer for every question. Treat each simulation as if it were the live A6 test waiting for you at a Prometric testing center. Pay particular attention to general electrical diagnostic questions and to the body electrical content — these are the areas where strong A6 candidates separate themselves from those who lack foundational diagnostic skills or who struggle with the breadth of modern body electrical systems.

PRACTICE EXAM 1: A6 SIMULATION — ELECTRICAL/ELECTRONIC SYSTEMS

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1. A vehicle is brought in with a complaint of a parasitic battery drain. The MOST appropriate first diagnostic step is to:

A. Measure parasitic current with a DMM in series with the negative cable

B. Replace the battery as a precaution

C. Replace the alternator as the most direct repair

D. Apply compressed air to the battery

2. The proper procedure for measuring voltage drop across a connection is to:

A. Apply compressed air to the connection

B. Replace the connection as a precaution

C. Visually inspect for visible damage only

D. Connect a DMM in parallel across the connection while current flows

3. A technician is using a DMM to measure resistance in a circuit. The MOST important rule for accurate resistance measurement is to:

A. Apply compressed air to the meter

B. Disconnect power from the circuit before measuring

C. Replace the meter as a precaution

D. Apply maximum voltage to the circuit

4. The proper purpose of a voltage drop test is to:

A. Apply compressed air to the circuit

B. Replace the circuit as a precaution

C. Filter contaminants from the circuit

D. Measure voltage loss across a component or connection under operating conditions

5. A vehicle's circuit shows excessive voltage drop across a connection during a load test. The MOST likely cause is:

A. A worn power steering pulley

B. A worn ball joint

C. Corrosion, loose connection, or high resistance at the affected point

D. Air in the clutch hydraulic system

6. The proper procedure for diagnosing a circuit with high resistance is to:

A. Apply compressed air to the circuit

B. Perform voltage drop testing along the circuit to identify the high-resistance point

C. Replace the entire circuit as a precaution

D. Visually inspect for visible damage only

7. A vehicle's battery has been tested with a conductance tester and reports good. The vehicle still exhibits cranking issues. The MOST appropriate next step is to:

A. Test the cranking circuit for excessive voltage drop during cranking

B. Replace the battery as a precaution

C. Replace the starter as the most direct repair

D. Replace the alternator as a precaution

8. The proper purpose of a battery load test is to:

A. Apply compressed air to the battery

B. Replace the battery as a precaution

C. Filter contaminants from the battery

D. Apply a calibrated load and verify the battery maintains specified voltage

9. A vehicle equipped with an AGM (Absorbent Glass Mat) battery has been brought in for service. The proper procedure for charging an AGM battery is to:

A. Apply compressed air to the battery

B. Replace the battery as a precaution

C. Use an AGM-compatible charger at the manufacturer's specified rate

D. Apply maximum charging voltage to the battery

10. The proper procedure for verifying battery state of charge is to:

A. Apply compressed air to the battery

B. Use a hydrometer or digital battery tester and compare to specification

C. Replace the battery as a precaution

D. Visually inspect for visible damage only

11. A vehicle has been brought in with a complaint of slow cranking. Voltage drop testing shows excessive drop across the negative battery cable to engine ground. The MOST likely cause is:

A. Corrosion at the cable terminal, loose connection, or damaged cable

B. A worn power steering pulley

C. A worn ball joint

D. Air in the clutch hydraulic system

12. The proper procedure for testing starter current draw is to:

A. Apply compressed air to the starter

B. Replace the starter as a precaution

C. Visually inspect for visible damage only

D. Use an inductive amp clamp on the starter cable during cranking

13. A vehicle's starter draws excessive current during cranking. The MOST likely cause is:

A. A worn power steering pulley

B. A worn ball joint

C. Internal starter wear, engine binding, or low system voltage

D. Air in the clutch hydraulic system

14. The proper purpose of the starter solenoid is to:

A. Apply compressed air to the starter

B. Switch high current to the motor and engage the pinion with the ring gear

C. Filter contaminants from the starter

D. Drive the alternator during operation

15. A vehicle equipped with a stop-start system has been brought in with a complaint that the system does not function. The MOST likely cause is:

A. A failed stop-start battery, module fault, or fault in the high-cycle starter

B. A worn power steering pulley

C. A worn ball joint

D. Air in the clutch hydraulic system

16. The proper procedure for diagnosing a stop-start system fault is to:

A. Apply compressed air to the system

B. Replace the stop-start module as the most direct repair

C. Replace the brake fluid as the only step

D. Verify the concern, retrieve DTCs, monitor scan data, and verify operation

17. A vehicle's charging system has been tested. The alternator output voltage reads 12.4 volts at idle with the charging system commanded on. The MOST likely cause is:

A. Apply compressed air to the alternator

B. Replace the battery as a precaution

C. Failed alternator, failed regulator, or open circuit in the alternator wiring

D. Replace the starter as a precaution

18. The proper procedure for testing alternator output is to:

A. Apply compressed air to the alternator

B. Connect a DMM to the battery, command charging on, and verify voltage at varied loads

C. Replace the alternator as a precaution

D. Visually inspect for visible damage only

19. A vehicle's alternator has been replaced. After installation, the customer reports the battery warning light remains illuminated. The MOST likely cause is:

A. Improper installation, missing belt tension, or fault in the charging circuit

B. A worn power steering pulley

C. A worn ball joint

D. Air in the clutch hydraulic system

20. The proper purpose of the voltage regulator is to:

A. Apply compressed air to the alternator

B. Replace the alternator as a precaution

C. Filter contaminants from the alternator

D. Maintain alternator output voltage by controlling field current

21. A vehicle equipped with an externally-regulated alternator has been brought in for diagnosis. The proper procedure for verifying voltage regulator operation is to:

A. Apply compressed air to the regulator

B. Replace the regulator as a precaution

C. Vary load conditions, monitor charging voltage, and verify proper regulation

D. Visually inspect for visible damage only

22. A vehicle's charging system shows AC ripple voltage exceeding specification when measured at the battery. The MOST likely cause is:

A. Apply compressed air to the alternator

B. Failed diodes in the alternator rectifier, allowing AC into the DC output

C. Replace the battery as a precaution

D. Replace the starter as a precaution

23. The proper procedure for measuring AC ripple voltage on the charging system is to:

A. Apply compressed air to the system

B. Replace the alternator as a precaution

C. Replace the brake fluid as the only step

D. Set the DMM to AC volts, connect at the battery with the engine running

24. A vehicle has been brought in with a complaint that one headlight does not operate. The MOST appropriate first diagnostic step is to:

A. Verify the concern, check the bulb, and inspect for power and ground at the lamp

B. Replace the headlight as a precaution

C. Replace the headlight switch as a precaution

D. Replace the brake fluid as the only step

25. The proper procedure for testing a headlight circuit is to:

A. Apply compressed air to the circuit

B. Replace the bulb as a precaution

C. Verify proper voltage and ground at the bulb socket and identify any high-resistance points

D. Visually inspect for visible damage only

26. A vehicle equipped with HID (High-Intensity Discharge) headlights has been brought in with a complaint of one HID bulb not operating. The MOST appropriate diagnostic action is to:

A. Apply compressed air to the bulb

B. Verify the bulb, ballast, igniter, and wiring before replacing components

C. Replace the bulb as a precaution

D. Replace the brake fluid as the only step

27. The proper purpose of an HID ballast is to:

A. Apply compressed air to the bulb

B. Replace the bulb as a precaution

C. Filter contaminants from the bulb

D. Convert 12-volt DC into the high-voltage AC required to operate the HID bulb

28. A vehicle equipped with LED headlights has been brought in with a complaint that one LED headlight has reduced output (some LEDs not lighting). The MOST appropriate action is:

A. Replace the LED headlight assembly, since LED arrays are typically not serviceable

B. Apply compressed air to the LED

C. Replace the brake fluid as the only step

D. Replace the steering rack as a precaution

29. The proper purpose of LED headlight technology is to:

A. Apply compressed air to the headlights

B. Replace the headlights as a precaution

C. Provide longer life, lower power consumption, and faster response than incandescent

D. Filter contaminants from the headlights

30. A vehicle equipped with adaptive headlights has been brought in for diagnosis. The proper purpose of adaptive headlights is to:

A. Apply compressed air to the headlights

B. Adjust headlight aim or pattern based on speed, steering angle, and conditions

C. Replace the headlights as a precaution

D. Filter contaminants from the headlights

31. A vehicle has been brought in with a complaint that the brake lights do not operate. The MOST appropriate diagnostic action is to:

A. Apply compressed air to the brake light circuit

B. Replace the bulbs as a precaution

C. Replace the brake light switch as a precaution

D. Verify the concern, check bulbs, switch, and voltage at the lamps when applied

32. The proper procedure for diagnosing a brake light circuit fault is to:

A. Verify the concern, retrieve DTCs, inspect bulbs, switch, and wiring, and identify the cause

B. Apply compressed air to the circuit

C. Replace the brake light circuit as a precaution

D. Replace the brake fluid as the only step

33. A vehicle equipped with CAN bus communication has been brought in with a complaint of multiple electrical systems not functioning. Scan tool data shows multiple modules are not communicating. The MOST likely cause is:

A. Apply compressed air to the system

B. Replace all modules as a precaution

C. A CAN bus communication fault, network wiring issue, or terminator fault

D. Replace the brake fluid as the only step

34. The proper procedure for diagnosing CAN bus communication faults is to:

A. Apply compressed air to the system

B. Use a scan tool to verify communication, check network DTCs, inspect bus wiring

C. Replace all modules as a precaution

D. Visually inspect for visible damage only

35. A vehicle has been brought in with a complaint that the instrument cluster shows incorrect or erratic information. Scan tool data shows the cluster is communicating normally. The MOST likely cause is:

A. Apply compressed air to the cluster

B. Replace the cluster as a precaution

C. Replace the brake fluid as the only step

D. A failed sensor providing input to the cluster, or fault in the data being received

36. The proper procedure for diagnosing instrument cluster issues is to:

A. Apply compressed air to the cluster

B. Replace the cluster as the most direct repair

C. Verify the concern, retrieve DTCs, monitor sensor inputs, and identify the cause

D. Replace the brake fluid as the only step

37. A vehicle equipped with power windows has been brought in with a complaint that one window does not operate from the master switch. The window operates from the door switch on that side. The MOST likely cause is:

A. A fault in the master switch or wiring between the master switch and door switch

B. Apply compressed air to the window

C. Replace the window motor as a precaution

D. Replace the brake fluid as the only step

38. The proper procedure for diagnosing power window faults is to:

A. Apply compressed air to the window

B. Verify the concern, check master and door switch operation, and verify wiring

C. Replace the window motor as the most direct repair

D. Replace the brake fluid as the only step

39. A vehicle equipped with power locks has been brought in with a complaint that one door does not lock or unlock when commanded. The MOST appropriate action is:

A. Apply compressed air to the lock

B. Replace the lock actuator as a precaution

C. Replace the door switch as a precaution

D. Verify the concern, check actuator operation, and verify wiring and ground

40. The proper procedure for diagnosing power lock circuit faults is to:

A. Apply compressed air to the locks

B. Replace the locks as a precaution

C. Verify the concern, retrieve DTCs, check actuator operation, and verify wiring

D. Replace the brake fluid as the only step

41. A vehicle equipped with keyless entry has been brought in with a complaint that the keyless entry does not function from any key fob. The MOST likely cause is:

A. A failed receiver module, fault in the system, or low key fob batteries

B. Apply compressed air to the receiver

C. Replace the receiver as a precaution

D. Replace the brake fluid as the only step

42. The proper procedure for diagnosing keyless entry faults is to:

A. Apply compressed air to the system

B. Verify key fob operation, check receiver operation, and verify wiring

C. Replace the receiver as a precaution

D. Replace the brake fluid as the only step

43. A vehicle equipped with remote start has been brought in with a complaint that remote start does not function. The MOST appropriate diagnostic action is:

A. Apply compressed air to the remote start

B. Replace the remote start module as the most direct repair

C. Replace the brake fluid as the only step

D. Verify the concern, retrieve DTCs, verify module operation, and check security status

44. The proper purpose of a security system in a modern vehicle is to:

A. Apply compressed air to the system

B. Replace the system as a precaution

C. Prevent unauthorized starting through immobilizer and remote receiver verification

D. Filter contaminants from the system

45. A vehicle's security system has triggered an alarm and disabled the engine. The MOST appropriate action is:

A. Apply compressed air to the system

B. Verify status, identify the cause, perform the manufacturer-specified reset, and verify operation

C. Replace the security system as a precaution

D. Replace the brake fluid as the only step

46. A vehicle equipped with audio system has been brought in with a complaint of intermittent audio cutout. The MOST likely cause is:

A. A loose audio connection, marginal wiring, or fault in the audio module

B. Apply compressed air to the audio system

C. Replace the audio system as a precaution

D. Replace the brake fluid as the only step

47. The proper procedure for diagnosing audio system faults is to:

A. Apply compressed air to the audio system

B. Replace the audio system as the most direct repair

C. Replace the brake fluid as the only step

D. Verify the concern, check audio operation, verify wiring, and identify the cause

48. A vehicle has been brought in with a complaint of multiple electrical accessories not functioning. The technician finds the affected accessories share a common fuse. The MOST likely cause is:

A. Apply compressed air to the fuse

B. Open fuse, short in one accessory, or marginal connection in the shared circuit

C. Replace all the accessories as a precaution

D. Replace the brake fluid as the only step

49. The proper procedure for diagnosing a shared circuit fault is to:

A. Apply compressed air to the circuit

B. Replace the affected accessories as a precaution

C. Verify the concern, identify the shared component, and test each accessory individually

D. Replace the brake fluid as the only step

50. A vehicle has been brought in with a complaint of intermittent multiple electrical issues. The technician finds visible corrosion at multiple ground points. The MOST appropriate action is:

A. Repair the corroded grounds, restore proper grounding, and verify resolution

B. Apply compressed air to the grounds

C. Replace the affected systems as a precaution

D. Replace the brake fluid as the only step

PRACTICE EXAM 1: A6 SIMULATION — ANSWER KEY, EXPLANATIONS, AND TASK REMEDIATION

1. A — Measure parasitic current with a DMM in series with the negative cable. Parasitic drain measurement requires the DMM to capture the current flowing into the vehicle's electrical loads with the ignition off. The series connection in the negative cable path captures the total drain; readings above the manufacturer's specification indicate excessive parasitic load. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

2. D — Connect a DMM in parallel across the connection while current flows. Voltage drop testing requires current flow to reveal resistance. The DMM measures the voltage difference between two points; a high reading indicates resistance at that point reducing the available voltage downstream. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

3. B — Disconnect power from the circuit before measuring resistance. Resistance measurement uses the meter's internal voltage source; external voltage in the circuit produces inaccurate readings and can damage the meter. Power must be removed before measurement for accurate results. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

4. D — Measure voltage loss across a component or connection under operating conditions. Voltage drop is the diagnostic measurement that reveals resistance under load. Static resistance measurement may not detect connections that fail under current; voltage drop testing under operating conditions reveals the actual circuit performance. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

5. C — Corrosion, loose connection, or high resistance at the affected point. Excessive voltage drop indicates excess resistance at that point. Each cause produces resistance that consumes voltage that should be available downstream. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

6. B — Perform voltage drop testing along the circuit to identify the high-resistance point. Voltage drop testing through the circuit isolates the specific point where resistance occurs. Each test point

reveals if the resistance is upstream or downstream of that location. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

7. A — Test the cranking circuit for excessive voltage drop during cranking. A good battery with cranking issues localizes the problem to the cranking circuit. Voltage drop testing under cranking load reveals high-resistance points in cables, connections, or ground paths. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

8. D — Apply a calibrated load and verify the battery maintains specified voltage. Load testing reveals the battery's ability to deliver current under demand. Voltage that drops below specification during the load period indicates the battery cannot meet starting circuit demands. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

9. C — Use an AGM-compatible charger at the manufacturer's specified rate. AGM batteries require chargers designed for their construction and chemistry. Standard chargers may damage AGM batteries through improper charging profiles or excessive voltage. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

10. B — Use a hydrometer or digital battery tester and compare to specification. State of charge verification requires either electrolyte specific gravity (hydrometer, for serviceable batteries) or digital tester measurement. Both compare results to specification to determine the actual charge level. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

11. A — Corrosion at the cable terminal, loose connection, or damaged cable. Excessive voltage drop on the negative cable indicates resistance in the ground path. Each cause reduces the cable's ability to carry current efficiently, producing the slow cranking symptom. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

12. D — Use an inductive amp clamp on the starter cable during cranking. Starter current measurement uses an inductive clamp around the cable. The clamp captures the current draw during cranking; comparison to specification reveals if draw is excessive. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

13. C — Internal starter wear, engine binding, or low system voltage. Excessive starter current draw indicates the starter is working harder than design. Internal wear, mechanical binding, or low voltage each force the starter to draw more current to perform its function. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

14. B — Switch high current to the motor and engage the pinion with the ring gear. The starter solenoid serves dual purposes: switching the high-amperage current and physically engaging the pinion. Both functions are required for proper starting circuit operation. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

15. A — A failed stop-start battery, module fault, or fault in the high-cycle starter. Stop-start systems rely on specialized batteries and starters designed for high-cycle operation. Failure of these

specialized components produces the symptom even if standard starting works. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

16. D — Verify the concern, retrieve DTCs, monitor scan data, and verify operation. Stop-start system diagnosis requires comprehensive systematic approach including scan tool integration. Each step provides different diagnostic information about the system's components and operation. *ASE Task Reference: A6 Domain B — Battery and Starting System. Review subsection 6.2.*

17. C — Failed alternator, failed regulator, or open circuit in the alternator wiring. Charging voltage of 12.4 volts at idle with charging commanded indicates the alternator is not producing output. The cause must be in the alternator, the regulator, or the connecting wiring. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

18. B — Connect a DMM to the battery, command charging on, and verify voltage at varied loads. Alternator output verification requires DMM measurement at the battery while charging is commanded. Varied loads reveal if the alternator can maintain output across different demand levels. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

19. A — Improper installation, missing belt tension, or fault in the charging circuit. Persistent battery warning after alternator replacement indicates the new alternator is not properly integrated. Installation issues, belt tension, or circuit faults each prevent proper operation. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

20. D — Maintain alternator output voltage by controlling field current. The voltage regulator monitors system voltage and adjusts the alternator's field current to maintain proper output. This regulation prevents both undercharging and overcharging. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

21. C — Vary load conditions, monitor charging voltage, and verify proper regulation. Voltage regulator verification requires load variation to test the regulator's response. Proper regulation maintains voltage within specification across the range of loads. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

22. B — Failed diodes in the alternator rectifier, allowing AC into the DC output. Excess AC ripple voltage on the charging system is the diagnostic signature of failed rectifier diodes. Healthy diodes produce clean DC; failed diodes leak AC into the output. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

23. D — Set the DMM to AC volts, connect at the battery with the engine running. AC ripple measurement requires the DMM in AC volt mode at the battery while the alternator is operating. The reading captures the AC component leaking through failed diodes. *ASE Task Reference: A6 Domain C — Charging System. Review subsection 6.3.*

24. A — Verify the concern, check the bulb, and inspect for power and ground at the lamp. Headlight diagnosis requires systematic inspection. Each step isolates a different potential cause; bulb,

power, or ground issues each produce the symptom. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

25. C — Verify proper voltage and ground at the bulb socket and identify any high-resistance points. Headlight circuit testing requires verification of both power and ground at the bulb. High-resistance points reduce voltage available at the bulb, producing dim or no operation. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

26. B — Verify the bulb, ballast, igniter, and wiring before replacing components. HID systems have multiple components in the circuit. Diagnostic verification of each component prevents unnecessary replacement of working parts. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

27. D — Convert 12-volt DC into the high-voltage AC required to operate the HID bulb. The HID ballast performs the voltage transformation needed for HID operation. Without the ballast, the bulb cannot ignite or sustain operation. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

28. A — Replace the LED headlight assembly, since LED arrays are typically not serviceable. LED headlight arrays are typically integrated assemblies with non-serviceable LEDs. Partial LED failure requires complete assembly replacement; individual LED replacement is generally not possible. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

29. C — Provide longer life, lower power consumption, and faster response than incandescent. LED technology offers multiple advantages over incandescent: longer life, lower power, faster response, and improved durability. These advantages drive the adoption of LED lighting in modern vehicles. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

30. B — Adjust headlight aim or pattern based on speed, steering angle, and conditions. Adaptive headlights respond to driving conditions to optimize visibility. Speed, steering angle, and other inputs determine how the lights aim or what pattern they project. *ASE Task Reference: A6 Domain D — Lighting System. Review subsection 6.4.*

31. D — Verify the concern, check bulbs, switch, and voltage at the lamps when applied. Brake light diagnosis requires comprehensive systematic approach. Each step verifies a different aspect of the circuit; bulbs, switch, and voltage all contribute to potential causes. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

32. A — Verify the concern, retrieve DTCs, inspect bulbs, switch, and wiring, and identify the cause. Brake light circuit fault diagnosis requires comprehensive approach including DTCs and visual inspection. Modern systems may store DTCs that aid diagnosis. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

33. C — A CAN bus communication fault, network wiring issue, or terminator fault. Multiple modules not communicating is the diagnostic signature of network-level fault. CAN bus issues, wiring

damage, or terminating resistor faults all prevent module communication. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

34. B — Use a scan tool to verify communication, check network DTCs, inspect bus wiring. CAN bus diagnosis requires scan tool integration and physical inspection. Each step provides different diagnostic information about the network state. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

35. D — A failed sensor providing input to the cluster, or fault in the data being received. Cluster showing erratic data with normal communication indicates the data being received is faulty. Sensor failure or data fault produces incorrect display even when the cluster operates normally. *ASE Task Reference: A6 Domain E — Instrument Cluster, Driver Information, and Body Electrical Systems. Review subsection 6.5.*

36. C — Verify the concern, retrieve DTCs, monitor sensor inputs, and identify the cause. Instrument cluster diagnosis requires verification, DTC retrieval, sensor monitoring, and cause identification. Each step isolates different potential causes. *ASE Task Reference: A6 Domain E — Instrument Cluster, Driver Information, and Body Electrical Systems. Review subsection 6.5.*

37. A — A fault in the master switch or wiring between the master switch and door switch. Window working from door switch but not master switch isolates the fault to the master switch circuit. The shared connection between switches is the common factor in proper master switch operation. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

38. B — Verify the concern, check master and door switch operation, and verify wiring. Power window diagnosis requires systematic verification of both switches and the wiring between them. Each component contributes to potential causes. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

39. D — Verify the concern, check actuator operation, and verify wiring and ground. Power lock diagnosis requires systematic approach. Actuator operation, wiring, and ground each contribute to potential causes. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

40. C — Verify the concern, retrieve DTCs, check actuator operation, and verify wiring. Power lock circuit diagnosis requires comprehensive approach including DTCs. Each step provides different diagnostic information. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

41. A — A failed receiver module, fault in the system, or low key fob batteries. Keyless entry not functioning from any key fob points to a system-level issue rather than individual fob failure. Receiver, system fault, or fob batteries each produce this symptom. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

42. B — Verify key fob operation, check receiver operation, and verify wiring. Keyless entry diagnosis requires verification of both fob and receiver. Each component contributes to potential causes. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

43. D — Verify the concern, retrieve DTCs, verify module operation, and check security status. Remote start diagnosis requires comprehensive approach including security status. Modern systems integrate remote start with security; status verification is critical. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

44. C — Prevent unauthorized starting through immobilizer and remote receiver verification. Modern security systems use immobilizer technology and verified key codes to prevent unauthorized operation. The system blocks starting if proper verification is not received. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

45. B — Verify status, identify the cause, perform the manufacturer-specified reset, and verify operation. Security alarm with engine disable requires identification of the cause and proper reset procedure. The manufacturer's specific procedure restores normal operation. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

46. A — A loose audio connection, marginal wiring, or fault in the audio module. Intermittent audio cutout is the diagnostic signature of marginal connections or fault. Each cause produces inconsistent operation that comes and goes. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

47. D — Verify the concern, check audio operation, verify wiring, and identify the cause. Audio system diagnosis requires systematic approach. Each step provides different diagnostic information about the cause. *ASE Task Reference: A6 Domain F — Body Electrical and Accessories. Review subsection 6.6.*

48. B — Open fuse, short in one accessory, or marginal connection in the shared circuit. Multiple accessories on a shared fuse not functioning indicates a circuit-level issue. The shared component (fuse) or one of the accessories on the shared circuit is the cause. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

49. C — Verify the concern, identify the shared component, and test each accessory individually. Shared circuit diagnosis requires identification of the shared element and individual accessory testing. The faulty accessory or shared component is identified through individual evaluation. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*

50. A — Repair the corroded grounds, restore proper grounding, and verify resolution. Multiple intermittent electrical issues with corroded grounds indicate ground integrity is the underlying cause. Repair of all affected grounds restores proper electrical operation. *ASE Task Reference: A6 Domain A — General Electrical/Electronic System Diagnosis. Review subsection 6.1.*