

PRACTICE EXAM 5: POSTAL AUTOMOTIVE TECHNICIAN EXAM (944) SIMULATION (100 QUESTIONS)

This 100-question practice exam is an expanded study simulation for USPS Automotive Technician Exam 944. USPS publicly identifies Exams 943/944/945 as automotive-knowledge assessments and requires Tests 943 and 944 for Automotive Technician applicants. Because USPS does not publish a current public weighted blueprint for Exam 944, this simulation uses a broad diagnostic distribution across engine performance, electrical systems, brakes, steering and suspension, drivetrain, cooling/fuel/emissions/HVAC, and maintenance diagnostics. Choose the single best answer for each question.

1. A gasoline engine cranks normally but will not start. A spark tester shows no spark on any cylinder. Which system should be checked first?

- A. Fuel injector spray pattern
- B. Ignition primary and control circuits
- C. Exhaust backpressure only
- D. Wheel-speed sensor wiring

2. During a cylinder leak-down test, air is heard clearly at the throttle body. What does this most strongly indicate?

- A. A restricted catalytic converter
- B. Worn connecting-rod bearings
- C. A weak fuel pump
- D. An intake valve is leaking

3. A compression test shows one cylinder much lower than the others. Adding a small amount of oil does not raise the reading. What is the most likely cause?

- A. Excessive fuel pressure

- B. A weak alternator
- C. A leaking valve
- D. Worn piston rings

4. What is the primary purpose of a harmonic balancer on an engine?

- A. Reduce crankshaft torsional vibration
- B. Advance ignition timing
- C. Increase oil pressure
- D. Control coolant flow

5. A vacuum gauge reading slowly drops as engine speed is held steady. Which condition is most likely?

- A. Excessive tire toe-in
- B. A restricted exhaust system
- C. A stuck-open thermostat
- D. A fully charged battery

6. A diesel engine ignites its fuel primarily by which process?

- A. A heated catalytic converter
- B. A magneto discharge
- C. A spark plug arc
- D. Heat produced by compression

7. An engine misfires only under heavy load. The spark plugs and fuel pressure are normal. Which ignition fault is especially likely?

- A. A clogged cabin filter
- B. A loose wheel bearing
- C. A weak ignition coil output

D. An open thermostat

8. Which condition commonly causes spark-plug carbon fouling on a gasoline engine?

- A. Low differential fluid
- B. Excessive charging voltage
- C. An excessively rich air-fuel mixture
- D. Too much positive caster

9. A timing chain has stretched enough to alter valve timing. Which symptom is most likely?

- A. Reduced power with poor engine breathing
- B. Higher brake pedal
- C. Brighter headlamps
- D. Lower steering effort

10. What does a cylinder balance test help identify?

- A. The refrigerant type
- B. A cylinder contributing less power than the others
- C. The axle gear ratio
- D. The exact tire circumference

11. A gasoline engine pings during acceleration even though the correct fuel is used. Which condition can promote detonation?

- A. Excessive combustion-chamber deposits
- B. A worn wiper blade
- C. Low washer-fluid level
- D. A loose exhaust hanger

12. Blue exhaust smoke that is most noticeable after a long deceleration commonly suggests what problem?

- A. An overcharged battery
- B. A blocked heater core
- C. A loose tie-rod end
- D. Oil entering through worn valve guides or seals

13. What is the main function of piston rings in a four-stroke engine?

- A. Control ignition dwell
- B. Set wheel camber
- C. Regulate alternator output
- D. Seal combustion pressure and control cylinder-wall oil

14. An engine has low compression on two adjacent cylinders and bubbles appear in the radiator during cranking. What is most likely?

- A. A failed head gasket between cylinders or coolant passage
- B. A seized parking-brake cable
- C. A clogged fuel filter
- D. A weak starter solenoid

15. What is the purpose of a positive crankcase ventilation system?

- A. Cool transmission fluid during heavy operation
- B. Route crankcase vapors into the intake for controlled burning
- C. Adjust steering toe during alignment service
- D. Increase brake hydraulic pressure during stops

16. A throttle body is heavily carboned around the throttle plate. Which symptom can result?

- A. Excessive axle end play
- B. A hard brake pedal from no assist
- C. Unstable or low idle airflow
- D. Overcharged air-conditioning refrigerant

17. Which test is most useful for comparing the mechanical sealing ability of all cylinders quickly?

- A. A compression test
- B. A wheel-alignment sweep
- C. A refrigerant leak test
- D. A charging-system ripple test

18. An engine oil-pressure warning light flickers at hot idle but goes out when speed increases. Which condition is plausible?

- A. A plugged cabin air filter
- B. Excessive internal bearing clearance
- C. A stuck parking brake
- D. A shorted oxygen sensor heater

19. What does volumetric efficiency describe?

- A. How much current a starter draws
- B. How evenly tires wear
- C. How quickly brake fluid boils
- D. How effectively an engine fills its cylinders with air

20. A steady vacuum reading that is lower than normal on an otherwise smooth-running engine can be caused by what?

- A. A full fuel tank
- B. Excessive brake shoe clearance
- C. Retarded ignition or valve timing
- D. An open wheel-speed sensor

21. A 12-volt circuit has 4 ohms of total resistance. Approximately how much current should flow?

- A. 2 amperes
- B. 48 amperes
- C. 4 amperes
- D. 3 amperes

22. What is the purpose of a fuse in an automotive electrical circuit?

- A. Create a ground path
- B. Protect wiring from excessive current
- C. Increase system voltage
- D. Store electrical energy

23. A battery measures 12.6 volts at rest and drops to 8.5 volts while cranking. What does the low cranking voltage most strongly suggest?

- A. A weak battery or excessive cranking load
- B. A clogged air filter
- C. A correctly operating battery
- D. An open stop-lamp switch

24. Two 12-volt batteries are connected in series. What is the nominal total voltage?

- A. 48 volts
- B. 12 volts

- C. 24 volts
- D. 6 volts

25. What does a voltage-drop test measure most directly?

- A. Battery specific gravity under a charging load
- B. Alternator belt tension during engine operation
- C. Spark-plug gap under cylinder pressure
- D. Voltage lost across a loaded connection or conductor

26. A starter solenoid clicks once but the starter does not turn. Battery voltage and cable connections are good. What is a likely cause?

- A. Worn starter motor brushes or internal starter fault
- B. A stuck-open thermostat
- C. Low power-steering fluid
- D. A restricted muffler

27. An alternator produces 14.2 volts at idle with electrical loads on. What does this generally indicate?

- A. The battery is necessarily shorted
- B. The starter is mechanically seized
- C. The charging system is operating normally
- D. The brake booster is leaking

28. Which meter connection is correct when measuring current in a circuit?

- A. Connect the ammeter across battery posts
- B. Connect the ammeter in series with the load
- C. Connect an ohmmeter to a powered circuit
- D. Connect the voltmeter in series

29. A headlamp is dim. Battery voltage at the bulb feed is normal, but the bulb ground shows a 2-volt drop with the lamp on. What is most likely?

- A. Excessive positive caster
- B. A shorted alternator rotor
- C. Excessive resistance in the ground circuit
- D. A restricted fuel return

30. What is the main function of a relay in a vehicle circuit?

- A. Allow a low-current control circuit to switch a higher-current load
- B. Increase engine compression during heavy acceleration
- C. Convert refrigerant pressure into electrical current
- D. Set brake shoe clearance during normal operation

31. A circuit has 12 volts applied and draws 6 amperes. Approximately how much electrical power is being used?

- A. 18 watts
- B. 72 watts
- C. 2 watts
- D. 144 watts

32. Which battery test best evaluates the battery's ability to supply high current for starting?

- A. A tire runout check
- B. A refrigerant dye test
- C. A manifold vacuum test
- D. A load or conductance test

33. A parasitic draw is measured at 0.25 ampere after all modules are asleep. How many milliamperes is that?

- A. 2500 milliamperes
- B. 250 milliamperes
- C. 25 milliamperes
- D. 2.5 milliamperes

34. What can excessive AC ripple at the alternator output indicate?

- A. A failed alternator diode
- B. A worn ball joint
- C. A leaking wheel cylinder
- D. A stuck thermostat

35. Why should resistance usually be measured only on an unpowered circuit?

- A. Current must always exceed 10 amps
- B. Voltage is required to measure ohms
- C. External voltage can damage the meter or distort the reading
- D. The battery must be charging

36. A normally closed relay contact has which condition when the relay coil is not energized?

- A. The coil has infinite current
- B. The load sees double voltage
- C. The contact path is always grounded
- D. The contact path is complete

37. A 5-volt reference circuit is shorted directly to ground. What voltage would a scan tool typically show on that reference?

- A. Near 12 volts
- B. Near 5 volts
- C. Near 24 volts
- D. Near 0 volts

38. What is continuity testing used to determine?

- A. Whether brake fluid contains water
- B. Whether coolant is acidic
- C. Whether an electrical path is complete
- D. Whether camber is positive

39. A starter draws extremely high current and turns the engine slowly. Battery and cables test good. Which fault is likely?

- A. An open horn switch
- B. Mechanical drag or an internally shorted starter
- C. A low washer-fluid level
- D. A weak oxygen sensor heater

40. In a simple parallel circuit, what remains the same across each branch?

- A. Voltage
- B. Resistance
- C. Power consumption
- D. Current

41. A brake pedal feels spongy and improves when pumped several times. What is a common cause?

- A. Air in the hydraulic system
- B. A worn engine mount
- C. A plugged fuel injector
- D. Excessive alternator output

42. What is the main advantage of disc brakes compared with drum brakes during repeated hard stops?

- A. Higher engine vacuum
- B. Better heat dissipation and resistance to fade
- C. Lower battery resistance
- D. Automatic wheel alignment

43. A vehicle pulls to the left during braking. The right front brake rotor is much cooler than the left after a stop. What is likely?

- A. The left tire is overinflated
- B. The alternator belt is loose
- C. The right front brake is not applying properly
- D. The coolant thermostat is open

44. What does the master cylinder convert pedal force into?

- A. Wheel alignment angle
- B. Engine vacuum
- C. Alternating current
- D. Hydraulic pressure

45. A hard brake pedal with poor stopping power on a vacuum-assisted system most strongly suggests what?

- A. Excessive shoe clearance

- B. Air in the brake lines
- C. Loss of brake-booster vacuum assist
- D. Low tire tread depth

46. What is the purpose of anti-lock braking during a hard stop?

- A. Increase engine oil pressure
- B. Prevent wheel lock while preserving steering control
- C. Raise charging voltage
- D. Change wheel camber

47. A red brake warning lamp remains on after the parking brake is released. What should be checked first?

- A. Brake fluid level and hydraulic warning circuit
- B. Engine air filter
- C. Transmission gear ratio
- D. Wiper-blade condition

48. A caliper slide pin is seized. What problem can result?

- A. Low engine compression
- B. Incorrect ignition firing order
- C. No alternator output
- D. Uneven pad wear and brake drag

49. What is brake fade?

- A. A steering wheel that returns slowly
- B. Reduced braking effectiveness as components become overheated
- C. An engine that idles too fast

D. A battery that self-discharges

50. A brake rotor has excessive lateral runout. Which symptom can it cause?

- A. Brake pedal pulsation
- B. A high refrigerant pressure
- C. A constant low fuel pressure
- D. A dim dome lamp

51. In a hydraulic brake system, 600 pounds of force acts on a piston area of 2 square inches. What pressure is produced?

- A. 600 psi
- B. 1200 psi
- C. 300 psi
- D. 150 psi

52. What is the function of a proportioning valve in a traditional brake hydraulic system?

- A. Set steering gear preload
- B. Regulate alternator field current
- C. Increase engine fuel pressure
- D. Limit rear brake pressure under heavy braking

53. A drum brake self-adjuster is not functioning. What symptom may gradually develop?

- A. Higher charging voltage
- B. Increased brake pedal travel
- C. Excessive ignition advance
- D. Lower engine coolant temperature

54. What should happen to brake fluid level in the master-cylinder reservoir as disc brake pads wear normally?

- A. It may gradually decrease as caliper pistons extend
- B. It should become engine oil
- C. It should drop suddenly to empty
- D. It should always rise

55. Why is petroleum-based fluid harmful to conventional brake hydraulic seals?

- A. It increases tire caster
- B. It magnetizes wheel bearings
- C. It freezes brake rotors
- D. It can swell and damage rubber components

56. Adjusting tie-rod length primarily changes which wheel-alignment angle?

- A. Caster
- B. Camber
- C. Toe
- D. Steering-axis inclination

57. What is the main function of a stabilizer bar?

- A. Apply the parking brake
- B. Raise engine compression
- C. Increase alternator output
- D. Reduce body roll during cornering

58. A worn outer tie-rod end most directly affects what?

- A. Fuel pressure
- B. Coolant concentration
- C. Steering looseness and toe control
- D. Battery capacity

59. A tire shows feathered wear across the tread. Which alignment condition is commonly involved?

- A. Incorrect toe
- B. Low refrigerant charge
- C. Rich fuel mixture
- D. Low battery voltage

60. What does positive caster generally help provide?

- A. Lower brake-fluid boiling point
- B. Directional stability and steering return
- C. Higher fuel pressure
- D. Greater starter current

61. A vehicle bounces repeatedly after crossing a bump. Which component is most likely worn?

- A. Fuel pressure regulator
- B. Starter relay
- C. Shock absorber or strut damper
- D. Brake master cylinder

62. A front wheel bearing has excessive play. Which additional symptom may occur?

- A. Hard cold starting

- B. High engine idle speed
- C. Low alternator frequency
- D. Growling noise that changes with vehicle load

63. What is camber?

- A. The inward or outward tilt of a wheel from vertical
- B. The difference in front and rear tire pressure
- C. The amount of brake pedal free play
- D. The angle of the steering wheel spokes

64. A power-steering pump whines and the fluid appears foamy. What is a likely cause?

- A. A clogged fuel injector
- B. Air entering the hydraulic system
- C. A weak ignition coil
- D. A worn brake rotor

65. Which tire condition most directly increases the risk of hydroplaning?

- A. Insufficient tread depth
- B. Fresh engine oil
- C. A fully charged battery
- D. Correct wheel bearing preload

66. What is the purpose of rotating tires at recommended intervals?

- A. Raise brake hydraulic pressure
- B. Increase engine compression
- C. Recharge the battery
- D. Promote more even tread wear

67. A vehicle consistently pulls to one side on a level road. Before aligning it, what basic condition should be checked?

- A. Battery electrolyte color
- B. Tire pressure and tire condition
- C. Spark plug heat range only
- D. Radio antenna height

68. Which component allows a driven wheel to steer while transmitting torque on many front-wheel-drive vehicles?

- A. Thermostat
- B. Brake proportioning valve
- C. Constant-velocity joint
- D. Pitman arm

69. What does excessive negative camber tend to do to tire wear?

- A. Increase wear on the inner tread edge
- B. Wear the outer edge only
- C. Increase wear only at tread center
- D. Eliminate all shoulder wear

70. If a wheel makes 500 revolutions while traveling a measured distance, and a replacement tire makes 525 revolutions over the same distance, which tire has the smaller rolling circumference?

- A. The original tire
- B. The replacement tire
- C. The result cannot be compared
- D. Both have identical circumference

71. What is the primary purpose of a differential?

- A. Regulate coolant temperature during engine operation
- B. Create brake vacuum during pedal application
- C. Increase alternator voltage during electrical loading
- D. Allow drive wheels to rotate at different speeds while transmitting torque

72. A clutch slips under heavy acceleration. Which condition is likely?

- A. A seized wheel cylinder
- B. A weak horn relay
- C. A worn clutch disc or weak pressure plate
- D. A clogged cabin filter

73. A driveshaft universal joint is worn. Which symptom is common?

- A. High battery state of charge
- B. Low engine oil pressure
- C. Clunking or vibration during acceleration and deceleration
- D. Soft brake pedal from air

74. A gearset has a 12-tooth driving gear and a 36-tooth driven gear. What is the gear ratio?

- A. 1:3
- B. 2:1
- C. 4:1
- D. 3:1

75. What is torque converter lockup designed to do at cruising speed?

- A. Lower battery voltage
- B. Reduce slip between engine and transmission
- C. Change wheel toe
- D. Increase brake pedal travel

76. An automatic transmission fluid is dark and smells burned. What does that most strongly suggest?

- A. Excessive transmission heat or clutch material distress
- B. Proper tire alignment
- C. A clean fuel injector
- D. A fully charged battery

77. What is the function of a synchronizer in a manual transmission?

- A. Apply disc brake pressure
- B. Match gear and shaft speeds before engagement
- C. Regulate alternator voltage
- D. Control engine coolant flow

78. A rear-wheel-drive vehicle has a vibration that rises with road speed but is unchanged by engine speed in neutral. What should be inspected?

- A. Ignition timing only
- B. Throttle body deposits
- C. Alternator brush wear
- D. Driveshaft balance and universal joints

79. What does a limited-slip differential do that an open differential may not?

- A. Increase radiator pressure
- B. Shorten spark duration
- C. Bias torque toward the wheel with better traction
- D. Reduce brake fluid volume

80. A final-drive ratio is 4:1. Approximately how many driveshaft revolutions are needed for one axle revolution?

- A. 4 revolutions
- B. 2 revolutions
- C. 1 revolution
- D. 8 revolutions

81. What is the thermostat's main job in an engine cooling system?

- A. Apply transmission bands
- B. Increase battery voltage
- C. Regulate coolant flow to control operating temperature
- D. Adjust wheel toe

82. A cooling system repeatedly pushes coolant into the overflow bottle and contains combustion gas. What is likely?

- A. A weak horn relay
- B. A worn tie-rod end
- C. A clogged cabin filter
- D. A cylinder-to-coolant leak such as a failed head gasket

83. A two-gallon cooling system is being filled with a 50/50 coolant mixture from separate concentrate and water. How much concentrate is needed?

- A. 1.5 gallons
- B. 1 gallon
- C. 2 gallons
- D. 0.5 gallon

84. What is the oxygen sensor primarily used to help the engine controller determine?

- A. Whether the exhaust mixture is rich or lean
- B. Battery reserve capacity
- C. Brake rotor thickness
- D. Wheel bearing preload

85. A fuel-injected gasoline engine has low fuel pressure under load. Which symptom is likely?

- A. Lean operation and loss of power
- B. Higher brake pedal
- C. Brighter interior lights
- D. Increased wheel caster

86. What does an evaporative-emission system prevent from escaping directly to the atmosphere?

- A. Transmission gear noise during vehicle operation
- B. Engine coolant vapor from the radiator
- C. Fuel vapors from the tank and fuel system
- D. Brake dust created during normal stopping

87. A catalytic converter glows red after prolonged operation. What condition can cause this?

- A. Low tire pressure alone
- B. A weak shock absorber
- C. An open wiper switch

D. Excess unburned fuel entering the exhaust

88. What is the purpose of an engine cooling-system pressure cap?

- A. Set ignition dwell
- B. Raise coolant boiling point and control system pressure
- C. Change transmission ratio
- D. Regulate brake balance

89. An A/C compressor clutch is engaged, but both high- and low-side pressures are nearly equal while the compressor runs. What can this indicate?

- A. A seized tie-rod end
- B. A compressor that is not pumping effectively
- C. Correct brake adjustment
- D. A fully charged starting battery

90. A cabin heater blows cool air even though the engine is fully warm. Both heater hoses are cold. What should be suspected?

- A. Excessive alternator ripple in the charging circuit
- B. Too much positive camber at the wheels
- C. Little or no hot coolant flow through the heater circuit
- D. A worn CV joint in the driveline

91. Before lifting a vehicle on a hoist, what is most important?

- A. Disconnect every spark plug
- B. Drain the fuel tank
- C. Deflate all tires
- D. Verify correct lift points and stable vehicle placement

92. Why should a torque wrench be used on critical fasteners?

- A. To apply the specified clamping force consistently
- B. To detect refrigerant leaks
- C. To measure battery voltage
- D. To set tire camber automatically

93. What is the safest practice before servicing a high-current starter cable?

- A. Leave the ignition on
- B. Disconnect the battery negative cable following service procedures
- C. Hold the cable with bare hands
- D. Short the cable to ground

94. A scan tool shows a diagnostic trouble code for a sensor circuit. What should the technician do next?

- A. Erase the code and return the vehicle
- B. Ignore wiring and grounds
- C. Test the circuit and sensor before replacing parts
- D. Replace every related module immediately

95. Why are safety glasses important when using a wire wheel or grinder?

- A. They protect the eyes from flying debris
- B. They set bearing preload
- C. They increase tool speed
- D. They reduce battery current

96. A micrometer is best suited for which task?

- A. Reading ignition trouble codes
- B. Checking fuel odor
- C. Bleeding hydraulic brakes
- D. Measuring small outside dimensions precisely

97. What is the advantage of comparing a test reading with the manufacturer's specification?

- A. It makes wiring diagrams unnecessary
- B. It turns an observation into an objective pass-fail judgment
- C. It eliminates the need for safety practices
- D. It guarantees every part is new

98. Why should the cause of a failed fuse be found before installing a higher-rated fuse?

- A. A higher fuse can allow wiring to overheat before opening
- B. A higher fuse lowers tire pressure
- C. A higher fuse cools the engine
- D. A higher fuse changes caster

99. A technician records 0.8 hour for diagnosis and 1.7 hours for repair. What is the total labor time?

- A. 1.9 hours
- B. 3.5 hours
- C. 2.5 hours
- D. 0.9 hour

100. When troubleshooting an intermittent electrical fault, which method is most useful?

- A. Replace the battery before testing any other circuit

- B. Increase the fuse size during the road test
- C. Disconnect all grounds while monitoring the circuit
- D. Monitor the circuit while gently moving suspect harnesses and connectors

Practice Exam 5: Answer Key and Explanations

1. **B** — Ignition primary and control circuits: all cylinders losing spark points to a common ignition-control failure. Fuel and exhaust faults do not directly explain a verified total loss of spark. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.
2. **D** — An intake valve is leaking: air at the intake path means cylinder pressure is escaping past an intake valve. Bearing, exhaust, and fuel faults do not create this leak-down path. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.
3. **C** — A leaking valve: oil would temporarily improve sealing if worn rings were the main cause. No improvement points toward valve sealing rather than the electrical or fuel systems. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.
4. **A** — Reduce crankshaft torsional vibration: the balancer absorbs twisting vibration produced by crankshaft firing pulses. Oil pressure, ignition timing, and coolant flow are controlled by other components. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.
5. **B** — A restricted exhaust system: backpressure can progressively reduce the engine vacuum available at a steady speed. Battery, alignment, and thermostat faults do not create that characteristic vacuum trend. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.
6. **D** — Heat produced by compression: diesel combustion begins when highly compressed air becomes hot enough to ignite injected fuel. Spark and magneto ignition are gasoline-engine methods and the catalyst is downstream. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.
7. **C** — A weak ignition coil output: high cylinder pressure under load requires greater secondary ignition voltage to fire the plug. Cooling, bearing, and cabin-filter faults do not selectively weaken spark under load. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.
8. **C** — An excessively rich air-fuel mixture: too much fuel leaves carbon deposits because combustion is incomplete and cooler than intended. Charging, differential, and alignment conditions do not directly

enrich the combustion mixture. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

9. A — Reduced power with poor engine breathing: incorrect valve timing reduces cylinder filling and exhaust scavenging across the operating range. Brake, lighting, and steering behavior are unrelated to camshaft-to-crankshaft timing. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

10. B — A cylinder contributing less power than the others: the test compares each cylinder's contribution by observing engine-speed change when cylinders are disabled. Tire, refrigerant, and axle information require different measurements or identification procedures. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

11. A — Excessive combustion-chamber deposits: deposits can raise effective compression and create hot spots that encourage abnormal combustion. The other choices do not alter combustion temperature or pressure inside the cylinders. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

12. D — Oil entering through worn valve guides or seals: high intake vacuum during deceleration can draw oil past worn valve-guide seals. Electrical, heater, and steering faults cannot account for oil-burning smoke. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

13. D — Seal combustion pressure and control cylinder-wall oil: rings seal the piston to the cylinder while scraping and distributing lubricating oil. Ignition, charging, and alignment functions are performed by completely different systems. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

14. A — A failed head gasket between cylinders or coolant passage: adjacent low cylinders plus combustion leakage into coolant strongly indicate head-gasket failure. Fuel, starting, and parking-brake faults cannot connect cylinder pressure with the cooling system. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

15. B — Route crankcase vapors into the intake for controlled burning: PCV removes blow-by vapors from the crankcase and meters them into the intake. Brake, transmission, and steering functions are unrelated to crankcase vapor control. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

16. C — Unstable or low idle airflow: deposits can restrict the small airflow needed when the throttle is nearly closed. Axle, brake-booster, and refrigerant conditions do not depend on throttle-plate cleanliness. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

17. A — A compression test: compression readings reveal how well each cylinder traps pressure during cranking. Alignment, charging, and refrigerant tests evaluate unrelated vehicle systems. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

18. B — Excessive internal bearing clearance: worn bearings can leak more oil internally when hot oil is thin, lowering idle pressure. The other faults do not directly reduce engine lubrication pressure at hot idle. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

19. D — How effectively an engine fills its cylinders with air: volumetric efficiency compares actual cylinder filling with the theoretical amount the displacement could hold. Tire wear, electrical current, and brake-fluid properties use different performance measures. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

20. C — Retarded ignition or valve timing: retarded timing reduces effective cylinder pressure and changes manifold vacuum without necessarily causing fluctuation. Wheel sensors, brake adjustment, and fuel quantity do not produce a uniformly low manifold-vacuum reading. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

21. D — 3 amperes: Ohm's law gives current by dividing voltage by resistance, so 12 divided by 4 equals 3. The other values result from multiplying or using the wrong relationship between voltage and resistance. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

22. B — Protect wiring from excessive current: a fuse opens when current becomes high enough to overheat protected wiring. Voltage increase, energy storage, and grounding are functions of other circuit components. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

23. A — A weak battery or excessive cranking load: a large voltage collapse under starter load indicates insufficient battery capacity or abnormally high starter demand. Stop-lamp and air-filter faults do not create a battery voltage drop during cranking. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

24. C — 24 volts: series connection adds the voltage of each battery while the same current path passes through both. Parallel connection would retain 12 volts, and the other totals do not match two equal series sources. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

25. D — Voltage lost across a loaded connection or conductor: voltage drop reveals unwanted resistance while current is actually flowing through the circuit. Specific gravity, belt tension, and plug gap require different tools and do not measure loaded circuit loss. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

26. A — Worn starter motor brushes or internal starter fault: a solid solenoid click shows the control circuit is operating while the starter motor itself may not conduct. Cooling, exhaust, and steering-fluid faults cannot prevent an electrically supplied starter from rotating. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

27. C — The charging system is operating normally: a regulated charging voltage in the mid-fourteen-volt range is typical when the system is functioning. That reading alone does not prove battery, starter, or brake-booster failures. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

28. B — Connect the ammeter in series with the load: current must pass through the ammeter, so the meter becomes part of the circuit path. Parallel ammeter connection can damage the meter, while the other connections misuse test instruments. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

29. C — Excessive resistance in the ground circuit: a large loaded drop on the ground side shows resistance between the lamp and battery negative. Alternator, fuel, and alignment faults do not create a localized ground-side voltage loss. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

30. A — Allow a low-current control circuit to switch a higher-current load: a relay uses an electromagnetic coil to control contacts that carry a larger load current. Refrigerant, compression, and brake adjustment involve mechanical systems rather than electrical switching. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

31. B — 72 watts: electrical power equals voltage multiplied by current, so 12 times 6 equals 72 watts. The other values come from dividing or doubling without using the correct power relationship. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

32. D — A load or conductance test: battery load or conductance testing evaluates available cranking capacity rather than simple open-circuit voltage alone. The other tests evaluate tires, engine breathing, or air-conditioning leakage. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

33. B — 250 milliamperes: one ampere equals one thousand milliamperes, so 0.25 ampere converts to 250 milliamperes. The other choices move the decimal incorrectly when converting amperes to milliamperes. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

34. A — A failed alternator diode: failed rectifier diodes allow more alternating-current content to remain in the charging-system output. Suspension, cooling, and hydraulic brake faults do not create electrical ripple at the alternator. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

35. C — External voltage can damage the meter or distort the reading: an ohmmeter supplies its own small test current and expects no outside circuit voltage. Applying power can produce false readings or damage the meter instead of improving the test. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

36. D — The contact path is complete: normally closed describes contacts that conduct in the relay's de-energized state. Grounding, infinite current, and doubled voltage are not inherent properties of a normally closed contact. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

37. D — Near 0 volts: a direct short to ground pulls the reference potential close to ground voltage. Normal reference voltage or battery-level values would not remain on a solid ground short. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

38. C — Whether an electrical path is complete: continuity testing checks for an uninterrupted conductive path between two points in an unpowered circuit. Brake fluid, wheel alignment, and coolant chemistry require different procedures and measuring tools. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

39. B — Mechanical drag or an internally shorted starter: high current with low cranking speed points to excessive mechanical load or low internal starter resistance. Horn, sensor-heater, and washer faults cannot account for the starter's abnormal current demand. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

40. A — Voltage: each parallel branch is connected across the same source points and therefore receives the same voltage. Branch current and resistance can differ, and power depends on the individual branch load. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

41. A — Air in the hydraulic system: air compresses under pedal force, producing extra pedal travel and a springy feel. Charging, injector, and mount faults do not change the compressibility of brake hydraulic fluid. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

42. B — Better heat dissipation and resistance to fade: the exposed rotor sheds heat efficiently, helping maintain friction during repeated braking. Engine vacuum, battery resistance, and alignment are not inherent advantages of the disc design. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

43. C — The right front brake is not applying properly: a cooler rotor indicates less friction and heat generation on that wheel during braking. Tire pressure may affect handling, but the temperature difference directly identifies unequal brake application. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

44. D — Hydraulic pressure: the master-cylinder piston applies force to brake fluid, creating hydraulic pressure for the wheel brakes. Electrical current, vacuum, and alignment angles are produced or controlled by different systems. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

45. C — Loss of brake-booster vacuum assist: without vacuum assist the hydraulic brakes still work, but much greater pedal effort is required. Air or shoe clearance usually causes excess travel, while tire tread does not make the pedal hard. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

46. B — Prevent wheel lock while preserving steering control: ABS rapidly modulates brake pressure when a wheel approaches lockup, helping maintain tire traction. Oil pressure, charging voltage, and camber are unrelated to hydraulic wheel-slip control. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

47. A — Brake fluid level and hydraulic warning circuit: the red brake lamp commonly indicates parking-brake application or a hydraulic system concern such as low fluid. The other choices do not normally command the primary brake warning indicator. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

48. D — Uneven pad wear and brake drag: a floating caliper must slide freely so both pads apply and release evenly. Engine compression, alternator output, and firing order are unrelated to caliper movement. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

49. B — Reduced braking effectiveness as components become overheated: excessive heat can reduce friction or boil fluid, requiring more pedal effort or distance. Steering, battery, and idle concerns describe different systems and do not define brake fade. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

50. A — Brake pedal pulsation: rotor wobble pushes the pads and caliper pistons back and forth as the wheel turns. Fuel, lighting, and refrigerant faults do not create a speed-related brake pedal pulse. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

51. C — 300 psi: hydraulic pressure equals force divided by area, so 600 pounds divided by 2 square inches equals 300 psi. The other values use multiplication or fail to divide the applied force by piston area. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

52. D — Limit rear brake pressure under heavy braking: the valve helps prevent premature rear-wheel lock by limiting rear hydraulic pressure as braking force rises. Fuel, charging, and steering adjustments are handled by unrelated components. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

53. B — Increased brake pedal travel: as shoe-to-drum clearance grows, the wheel-cylinder pistons must travel farther before the shoes contact. Charging, cooling, and ignition timing do not depend on drum-brake shoe clearance. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

54. A — It may gradually decrease as caliper pistons extend: normal pad wear moves caliper pistons outward, increasing fluid volume held in the calipers. A sudden empty reservoir indicates leakage, while rising level or fluid conversion is not normal behavior. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

55. D — It can swell and damage rubber components: brake seals are designed for specified brake fluid and can deteriorate when contaminated with petroleum products. Rotors, alignment, and bearings are not affected through those claimed mechanisms. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

56. C — Toe: tie rods determine the relative inward or outward pointing direction of the front wheels. Caster and camber are usually changed through other suspension adjustments, while steering-axis inclination is built in. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

57. D — Reduce body roll during cornering: the bar transfers suspension force between sides of the vehicle to resist excessive body roll. Charging, compression, and parking-brake functions are unrelated to lateral suspension control. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

58. C — Steering looseness and toe control: the tie-rod end links steering motion to the knuckle and must hold toe accurately. Fuel, battery, and coolant conditions are not controlled by the steering linkage. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

59. A — Incorrect toe: incorrect toe scrubs the tread sideways as the tire rolls, producing a feathered edge pattern. Electrical, fuel, and air-conditioning faults do not create lateral tire scrub. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

60. B — Directional stability and steering return: positive caster helps the wheels self-center and improves straight-line stability as the vehicle moves. Fuel, brake-fluid, and starter characteristics are unaffected by caster angle. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

61. C — Shock absorber or strut damper: dampers control spring oscillation, so worn units allow repeated up-and-down motion after a disturbance. Starting, fuel, and brake hydraulic components do not control suspension rebound. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

62. D — Growling noise that changes with vehicle load: a worn bearing can develop rough races that growl as wheel speed and side load change. Idle, alternator behavior, and starting quality are not produced by wheel-bearing clearance. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

63. A — The inward or outward tilt of a wheel from vertical: camber describes wheel tilt viewed from the front of the vehicle. Tire pressure, steering-wheel position, and pedal free play are separate measurements. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

64. B — Air entering the hydraulic system: air entrained in power-steering fluid can cause cavitation, noise, and foaming in the reservoir. Fuel, ignition, and brake-rotor conditions do not aerate steering hydraulic fluid. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

65. A — Insufficient tread depth: shallow tread cannot evacuate water as effectively, allowing a water film to separate the tire from the road. Oil condition, battery charge, and bearing preload do not replace tire water-channeling capacity. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

66. D — Promote more even tread wear: changing tire positions balances different wear patterns created by steering, drive, and load forces. Engine, brake, and charging performance do not improve simply from moving tires between positions. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

67. B — Tire pressure and tire condition: unequal tire pressure or tire construction can create a pull that mimics an alignment problem. Ignition, battery appearance, and antenna height do not create a consistent chassis pull. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

68. C — Constant-velocity joint: a CV joint transmits drive torque through changing angles as suspension and steering move. The other components belong to steering linkage, brakes, or cooling and do not carry axle torque. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

69. A — Increase wear on the inner tread edge: negative camber tilts the top of the tire inward, increasing loading toward the inner shoulder. Center wear is more associated with inflation, while outer-edge wear can result from opposite camber or other causes. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

70. B — The replacement tire: over the same distance, the tire making more revolutions must travel less distance per revolution and therefore has the smaller circumference. The original tire makes fewer turns, so each of its revolutions covers more distance. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

71. D — Allow drive wheels to rotate at different speeds while transmitting torque: during a turn the outside wheel travels farther, so the differential permits different wheel speeds. Charging, cooling, and brake assist functions are performed by other systems. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

72. C — A worn clutch disc or weak pressure plate: slip occurs when the clutch cannot clamp the engine and transmission together strongly enough. Brake, ventilation, and horn faults do not reduce clutch friction capacity. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

73. C — Clunking or vibration during acceleration and deceleration: clearance in a universal joint can create impact noise and changing driveline vibration as torque reverses. Lubrication pressure, battery charge, and brake hydraulic air are unrelated to driveshaft joint wear. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

74. D — 3:1: gear ratio is driven teeth divided by driving teeth, so 36 divided by 12 equals 3. The other ratios reverse the relationship or use tooth counts that are not present. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

75. B — Reduce slip between engine and transmission: the lockup clutch mechanically couples the converter members to reduce heat and improve efficiency. Brake, charging, and alignment conditions are unrelated to converter slip. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

76. A — Excessive transmission heat or clutch material distress: overheated fluid oxidizes and clutch friction material can discolor fluid and create a burned odor. Battery, alignment, and injector conditions do not produce burned transmission fluid. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

77. B — Match gear and shaft speeds before engagement: synchronizers use friction to equalize rotational speeds so gears engage smoothly without grinding. Cooling, brake, and charging functions do not occur inside the manual gearbox synchronizer. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

78. D — Driveshaft balance and universal joints: a road-speed-related vibration points to rotating driveline or wheel components rather than engine rpm. Ignition, throttle, and alternator faults would not track vehicle speed independently of engine speed. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

79. C — Bias torque toward the wheel with better traction: limited-slip mechanisms restrict excessive speed difference so more useful torque can reach the wheel with traction. Cooling, ignition, and brake fluid are unrelated to differential torque distribution. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

80. A — 4 revolutions: a four-to-one reduction means the input turns four times for each single output revolution. The other choices represent lower or higher ratios than the stated final-drive reduction.

Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults. Confirming evidence should agree with this diagnosis.

81. C — Regulate coolant flow to control operating temperature: the thermostat opens and closes with temperature to manage coolant circulation through the radiator. Charging, alignment, and transmission application are controlled by unrelated components. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

82. D — A cylinder-to-coolant leak such as a failed head gasket: combustion pressure entering the cooling system can overpressurize it and displace coolant into the reservoir. Horn, steering, and cabin-air faults cannot introduce combustion gas into coolant. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

83. B — 1 gallon: a fifty-percent mixture contains equal volumes of concentrate and water, so half of two gallons is one. The other amounts would create concentrations of twenty-five, seventy-five, or one hundred percent. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

84. A — Whether the exhaust mixture is rich or lean: oxygen content in exhaust provides feedback about combustion mixture so fuel delivery can be corrected. Brake, bearing, and battery measurements are unrelated to exhaust oxygen feedback. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

85. A — Lean operation and loss of power: insufficient fuel pressure can reduce injector flow when demand rises, causing a lean mixture and weak acceleration. Brake, alignment, and lighting behavior do not follow engine fuel-pressure demand. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

86. C — Fuel vapors from the tank and fuel system: the EVAP system stores and later purges hydrocarbon vapors instead of venting them freely. Coolant, brake dust, and gear noise are controlled or handled by different systems. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

87. D — Excess unburned fuel entering the exhaust: unburned fuel can oxidize inside the catalyst and create extreme heat that makes the shell glow. Tire, suspension, and wiper conditions do not supply combustible material to the converter. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

88. B — Raise coolant boiling point and control system pressure: pressurizing the cooling system raises the coolant boiling temperature while the cap limits maximum pressure. Ignition, brake balance, and gear ratio are not functions of the radiator or reservoir cap. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

89. B — A compressor that is not pumping effectively: a working compressor should create a pressure difference between suction and discharge sides. Battery, steering, and brake conditions do not explain

equalized refrigerant pressures with the compressor engaged. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

90. C — Little or no hot coolant flow through the heater circuit: cold heater hoses show that hot engine coolant is not reaching the heater core. Electrical ripple, driveline joints, and alignment angles do not determine heater-core coolant temperature. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

91. D — Verify correct lift points and stable vehicle placement: proper lift-point placement and balance prevent vehicle damage, slipping, or falling from the hoist. The other actions are unnecessary for ordinary lifting and do not establish safe support. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

92. A — To apply the specified clamping force consistently: proper torque creates the intended fastener preload without leaving the joint loose or overstressing threads. Voltage, alignment, and leak detection require different tools and measurement methods. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

93. B — Disconnect the battery negative cable following service procedures: isolating battery power reduces the chance of accidental short circuits, arcing, burns, or starter operation. Grounding the cable or leaving power connected increases risk rather than controlling it. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

94. C — Test the circuit and sensor before replacing parts: a trouble code identifies a system or circuit condition but does not prove a specific component has failed. Testing power, ground, signal, connectors, and operating conditions prevents unnecessary replacement. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

95. A — They protect the eyes from flying debris: rotating abrasive tools can launch metal particles, rust, or wire fragments at high velocity. Eye protection controls that hazard, while tool speed and vehicle adjustments require other procedures. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

96. D — Measuring small outside dimensions precisely: a micrometer uses a calibrated screw mechanism to measure thickness or diameter with high precision. Scan tools, sensory inspection, and brake bleeding are different diagnostic or service operations. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

97. B — It turns an observation into an objective pass-fail judgment: specifications provide an expected operating range so a measured value can be interpreted correctly. They do not replace safe procedures, diagrams, or further diagnosis when multiple causes are possible. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

98. A — A higher fuse can allow wiring to overheat before opening: the original fuse rating is chosen to protect wiring and components from excessive current. Increasing the rating can mask a short or

overload and create a fire hazard. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

99. C — 2.5 hours: total labor time is the sum of diagnosis and repair time, so 0.8 plus 1.7 equals 2.5 hours. The other values come from subtracting or adding the decimal quantities incorrectly. Verify with the proper test before replacing parts. This links the symptom to system operation and rules out unrelated faults.

100. D — Monitor the circuit while gently moving suspect harnesses and connectors: wiggle testing while watching voltage, current, or scan data can expose a poor terminal or broken conductor. Random replacement, larger fuses, and removed grounds can hide the fault or create new hazards. Verify before replacing parts. This ties the symptom to system operation and excludes unrelated faults.

