PRACTICE EXAM 14: A9 LIGHT VEHICLE DIESEL ENGINES SIMULATION (60 QUESTIONS)

1. A common-rail diesel starts and idles well but stumbles and lacks power above half throttle. Rail pressure tracks command at idle but falls short under load. The MOST likely cause is a:

A. faulty intake air temperature sensor

B. plugged diesel particulate filter

C. stuck-open exhaust gas recirculation valve

D. worn high-pressure pump low on volume

2. A diesel sets a sensor circuit code. Before condemning the sensor, the technician's BEST next step is to:

A. replace the sensor and clear the code

B. test the circuit, wiring, and connectors

C. disconnect the battery to force a relearn

D. road-test the vehicle until it recurs

3. A turbo-diesel makes less power than normal and the intake shows an oil film. The charge-air cooler holds pressure when tested. The MOST likely source of the oil is the:

A. engine air filter housing seal

B. turbocharger compressor seals

C. EGR cooler coolant-side passage

D. intake throttle actuator shaft

4. During a valve job, the seat width is found wider than specification. The MOST likely effect is:

A. excessive valve-spring installed height

B. reduced effective camshaft lobe lift

C. poor seating pressure and heat transfer

D. increased valve-guide-to-stem clearance

5. A diesel running on ultra-low-sulfur fuel shows accelerated high-pressure pump wear. The MOST likely fuel-related cause is:

A. inadequate fuel lubricity

B. excessive fuel cetane number

C. high fuel energy content

D. elevated fuel sulfur content

6. A reground crankshaft is installed and the bearings wipe within minutes of startup. The MOST likely overlooked item is:

A. connecting-rod side clearance

B. cylinder bore taper limit

C. piston ring end gap

D. main bearing oil clearance

7. A diesel's fuel return line runs noticeably hot and economy has dropped slightly. The component intended to manage this heat is the:

A. fuel/water separator bowl

B. high-pressure rail accumulator

C. return-line fuel cooler

D. low-pressure lift pump

8. A diesel with an after-treatment system shows rapid particulate-filter ash loading. The MOST likely cause is:

A. use of non-low-SAPS engine oil

B. a thermostat stuck open

C. a low fuel cetane number

D. a leaking water-pump seal

9. A diesel cranks normally but will not start, and a scan tool shows zero rail pressure during cranking. Supply pressure is good. The technician should next check the:

A. glow plug control module

B. intake air heater relay

C. exhaust back-pressure sensor

D. high-pressure pump and rail control valves

10. A diesel runs well but a whistling intake leak is heard after the turbocharger. The MOST likely consequence is:

A. higher than normal boost pressure

B. lost boost and reduced power

C. coolant entering the cylinders

D. overcharged starting batteries

11. A diesel injector is replaced, but the engine still misfires on that cylinder and the new injector tests good. The technician MOST likely omitted:

A. flushing the engine cooling system

B. bleeding the air from the coolant

C. programming the injector calibration code

D. replacing the low-pressure lift pump

12. A cylinder head is resurfaced repeatedly over its service life. The risk of excessive material removal is:

A. altered piston-to-valve clearance and timing

B. increased valve-spring free length

C. a higher fuel cetane requirement

D. reduced cylinder bore diameter

13. A connecting rod is found bent during teardown. The MOST likely engine symptom this produced was:

A. excessive crankshaft end-play

B. high common-rail fuel pressure

C. a stuck variable-geometry turbocharger

D. uneven wear on that cylinder and bearing

14. A diesel shows black smoke and low power. Boost is well below the commanded value. This MOST directly points to a problem in the:

A. low-pressure fuel supply

B. glow plug control circuit

C. air or exhaust (boost) system

D. battery and charging system

15. In severe cold, a diesel runs fine briefly, then loses power as the fuel filter restricts. The fuel has exceeded its:

A. cold filter plugging point

B. maximum cetane rating

C. sulfur concentration cap

D. rated energy content limit

16. A diesel particulate filter cannot complete regeneration and exhaust back-pressure is high. The MOST likely cause is:

A. excessive soot or ash loading the filter

B. an overfilled diesel exhaust fluid tank

C. a thermostat stuck in the open position

D. a worn high-pressure fuel pump

17. A diesel stalls intermittently and runs rough, and bubbles appear in a clear test section of the supply line. The MOST likely cause is:

A. excessive rail pressure at idle

B. a suction-side air leak in the supply

C. an overcharged battery condition

D. a stuck variable-geometry turbocharger

18. A bore gauge reads larger at the top of ring travel than at the bottom. This describes cylinder:

A. out-of-round at a single depth

B. main bearing running clearance

C. connecting-rod side clearance

D. taper along the bore

19. A valve burns repeatedly after a head rebuild. The MOST likely overlooked cause is:

A. excessive valve-spring installed height

B. a high fuel cetane number

C. insufficient valve margin or poor seating

D. low cylinder bore taper

20. A diesel shows milky oil and a rising coolant level after running. The MOST likely cause is an internal leak in the:

A. low-pressure fuel pump

B. oil-to-coolant oil cooler

C. turbocharger center housing

D. high-pressure fuel rail

21. A diesel piston shows scuffing on one side with a discolored crown. A likely lubrication-related cause is a:

A. blocked piston oil-cooling jet

B. failed water-pump shaft seal

C. thermostat stuck in the open position

D. radiator clogged on the outside

22. An SCR-equipped diesel shows the downstream NOx sensor nearly matching the upstream sensor. This indicates:

A. fully effective NOx reduction

B. excessive turbocharger boost

C. poor NOx conversion from a fault

D. an overfilled DEF storage tank

23. A diesel produces white smoke and runs rough on cold start, clearing as it warms. If fuel-related, the MOST likely cause is:

A. excessive common-rail pressure

B. an overcharged battery condition

C. a stuck exhaust gas recirculation valve

D. low fuel cetane causing ignition delay

24. A customer reports a "lacks power" complaint with no detail. The technician's FIRST action should be to:

A. replace the most likely worn part

B. define when and how the symptom occurs

C. clear all of the stored trouble codes

D. estimate the repair's resale impact

25. A common-rail diesel delivers a small injection before the main event. This pilot injection primarily:

A. burns ash in the particulate filter

B. cools the SCR catalyst before dosing

C. softens pressure rise and cuts noise

D. raises rail pressure during cranking

26. A reground valve face must retain adequate margin so that the valve does not:

A. overheat and burn at the edge

B. increase the camshaft lobe lift

C. raise the fuel cetane requirement

D. enlarge the cylinder bore taper

27. A water-in-fuel lamp illuminates on a diesel. The correct technician response is to:

A. replace the high-pressure pump

B. raise the commanded rail pressure

C. reprogram all the fuel injectors

D. drain water from the separator

28. A variable-geometry turbo gives poor boost off idle, and the vanes are coated in carbon. The MOST likely cause is:

A. a cracked charge-air cooler core

B. a failed low-pressure lift pump

C. carbon binding the variable vanes

D. a thermostat stuck in the open position

29. A main bearing shows a wiped, heat-discolored surface with no embedded grit. This MOST likely resulted from:

A. abrasive dirt carried in the oil

B. loss of lubrication or oil film

C. normal break-in wear over time

D. correct clearance and a good film

30. A diesel's low-pressure supply tests below specification. The MOST likely result is:

A. inability to build proper rail pressure

B. overcharged starting batteries

C. excessively low coolant temperature

D. a stuck-open exhaust gas recirculation valve

31. A diesel vibration is felt that changes only with engine rpm and not with road speed. This points to a source in the:

A. drive axle and wheel hubs

B. transmission output shaft

C. tire and wheel balance

D. engine itself

32. A diesel sets a fault that occurs only on cold mornings. The data MOST useful for reproducing the fault is the:

A. total vehicle mileage

B. repair labor estimate

C. stored freeze-frame conditions

D. recorded tire pressure log

33. A diesel oxidation catalyst supports active regeneration mainly by:

A. oxidizing hydrocarbons to generate heat

B. dosing diesel exhaust fluid into the flow

C. trapping the soot particles physically

D. recirculating exhaust to the intake

34. A diesel reads low oil pressure when hot at idle but normal when cold. The MOST likely cause is:

A. a pressure-relief valve stuck closed

B. worn bearings as the hot oil thins

C. an overfilled engine crankcase

D. a plugged piston oil-cooling jet

35. An electronic unit injector (EUI) develops its high pressure by being:

A. fed from a shared common rail

B. driven by high-pressure engine oil

C. supplied by the lift pump alone

D. driven mechanically by a camshaft lobe

36. A cylinder-head deck is checked for flatness with a straightedge and feeler gauge. A measured gap indicates:

A. head warpage requiring machining

B. excessive valve-guide clearance

C. reduced camshaft lobe lift

D. low valve-spring seat pressure

37. A diesel injector leak-off test shows one injector returning far more than the rest. This identifies:

A. a correctly sealing new injector

B. a contaminated engine air filter

C. a worn injector leaking off excessively

D. a stuck-closed EGR cooler valve

38. A plugged diesel particulate filter most directly affects the turbocharger by:

A. increasing the alternator output

B. raising back-pressure and lowering boost

C. overcooling the intake air charge

D. raising the fuel supply pressure

39. A diesel fuel/water separator is serviced to protect downstream parts mainly from:

A. excessive cetane levels

B. high fuel temperature

C. low fuel energy content

D. water-induced corrosion and damage

40. To distinguish an air-side from a fuel-side cause of black smoke with low boost, the technician compares:

A. coolant temperature to oil temperature

B. battery voltage to alternator output

C. actual boost to commanded boost

D. DEF level to the NOx readings

41. A diesel trouble code names a circuit. The professional interpretation is that the code:

A. identifies a circuit, not always a failed part

B. always names the exact failed part

C. requires immediate part replacement

D. records the dollar cost of the repair

42. On a diesel, the mass airflow sensor is used heavily to control EGR flow and to:

A. set the coolant temperature target

B. smoke-limit fueling based on air mass

C. regulate the alternator output

D. control the starter cranking current

43. During bottom-end assembly, the crank is turned by hand after each torque step to:

A. seat the piston rings to the bores

B. prime the high-pressure fuel pump

C. set the camshaft-to-crank timing

D. detect any binding before startup

44. A HEUI fuel system actuates injection using:

A. fuel from a shared common rail

B. a camshaft lobe at each injector

C. high-pressure engine oil via the IPR valve

D. compressed air from the intake

45. A diesel overheats and coolant drips from a hole beneath the water-pump shaft. This indicates a:

A. thermostat stuck in the closed position

B. failed water-pump shaft seal

C. cracked radiator end tank

D. leaking passenger heater core

46. Multiple injection events per combustion cycle on a common-rail diesel primarily improve:

A. control of noise, emissions, and combustion

B. separation of water from the fuel

C. cooling of the after-treatment system

D. charging of the batteries at idle

47. Selective catalytic reduction converts NOx into:

A. carbon monoxide and hydrocarbons

B. soot trapped by the filter

C. sulfur dioxide and carbon dioxide

D. nitrogen and water vapor

48. A diesel loses rail pressure only under heavy flow while idle pressure is normal. This MOST likely indicates a:

A. rail-pressure sensor biased high

B. stuck-open exhaust gas recirculation valve

C. contaminated mass airflow sensor

D. worn high-pressure pump short on volume

49. Aggressive abrasive discs on an aluminum cylinder head are avoided because they can:

A. raise the valve-spring installed height

B. increase the camshaft lobe lift

C. remove metal and ruin surface flatness

D. lower the fuel's cetane number

50. The low-pressure lift pump's main role in a diesel fuel system is to:

A. supply adequate fuel to the high-pressure pump

B. atomize the fuel inside the cylinder

C. store high-pressure fuel for the injectors

D. cool the SCR catalyst during dosing

51. A diesel noise occurs at exactly one-half crankshaft speed on a four-stroke engine. This points to the:

A. connecting-rod bearings

B. valve-train components

C. crankshaft main bearings

D. turbocharger center bearings

52. Cetane number describes a diesel fuel's:

A. resistance to autoignition

B. energy content per gallon

C. readiness to autoignite

D. sulfur concentration level

53. A charge-air cooler raises power and lowers combustion temperature by:

A. cooling compressed intake air to raise density

B. raising exhaust temperature for regeneration

C. filtering abrasive particles from intake air

D. recirculating exhaust into the intake

54. Cylinder bore out-of-round is determined by measuring the bore:

A. only near the bottom of travel

B. across to an adjacent cylinder bore

C. at the crankshaft main journal

D. in two directions at the same depth

55. Biodiesel may plug a fuel filter shortly after first use because it:

A. raises the fuel's sulfur content

B. loosens existing deposits as a solvent

C. lowers injection pressure permanently

D. cannot pass through a standard filter

56. Low-SAPS engine oil is required on after-treatment diesels chiefly to:

A. raise the fuel's cetane number

B. increase the coolant's boiling point

C. protect the particulate filter and catalysts

D. remove the need for oil-cooling jets

57. A diesel runs cold, makes white smoke, and fails to regenerate. The MOST likely cooling-system cause is a:

A. thermostat stuck in the open position

B. water-pump seal leaking externally

C. radiator clogged on the outside surface

D. head gasket leaking combustion gas

58. A variable-geometry turbocharger can raise exhaust back-pressure on command to support:

A. low-pressure fuel delivery

B. cold-cranking of the engine

C. battery charging at idle

D. regeneration and exhaust braking

59. A persistent suction-side restriction in the low-pressure circuit will MOST likely cause:

A. excessively high common-rail pressure

B. fuel starvation and power loss under load

C. overcharged starting batteries

D. a stuck-open exhaust gas recirculation valve

60. A new common-rail injector runs rough with a cylinder-balance code though it tests good. The technician forgot to:

A. flush the engine cooling system

B. program the injector calibration code

C. replace the low-pressure lift pump

D. bleed the air from the coolant

PRACTICE EXAM 14– ANSWER KEY (Questions 1–60)

1. D — A worn high-pressure pump can keep up at idle but cannot deliver enough volume under load, so rail pressure falls short and power drops. The shortfall appears only with demand. Comparing commanded to actual rail pressure across load isolates the pump.

2. B — A code names a circuit, so the technician tests the circuit, wiring, and connectors before condemning the sensor. Faults often live in harnesses or connections, not the part. Testing first prevents replacing a good sensor.

3. B — With the charge-air cooler holding pressure, oil film in the intake points to leaking turbocharger compressor seals upstream. The turbo pushes oil into the charge air. Finding oil with an intact cooler directs diagnosis to the turbo.

4. C — A seat ground too wide reduces the unit seating pressure and can trap carbon, hurting sealing and heat transfer from valve to head. Correct width concentrates contact for a tight seal. This is why seat width is held to specification.

5. A — Ultra-low-sulfur diesel has reduced natural lubricity, and inadequate lubricity accelerates high-pressure pump and injector wear. Lubricity additives normally compensate. Low-lubricity fuel is the fuel-side cause of rapid pump wear.

6. D — Bearings that wipe within minutes of startup point to incorrect main bearing oil clearance starving the oil film. Too little clearance or a missed Plastigage check causes immediate failure. Verifying clearance during assembly prevents this.

7. C — Hot return fuel is managed by the return-line fuel cooler, which sheds heat from fuel coming back from the high-pressure system. Excess fuel heat can harm tank and pump parts. The cooler maintains fuel density and protects components.

8. A — Using non-low-SAPS oil raises the ash-forming additives that the particulate filter cannot burn off, accelerating ash loading. Low-SAPS oil is specified to slow this. The wrong oil shortens filter life.

9. D — Zero rail pressure during cranking with good supply points to the high-pressure pump and rail control valves failing to build pressure. Excessive leak-off or a non-responsive metering valve prevents charging the rail. These are the next components to test.

10. B — An intake leak after the turbocharger lets pressurized charge air escape, so boost and power fall. The compressed air is lost before reaching the cylinders. Sealing the post-turbo path restores boost.

11. C — A new injector that still misfires despite testing good was installed without programming its calibration code. The ECM cannot compensate for the injector's flow variation without it. Programming the code resolves the misfire.

12. A — Excessive material removal from repeated resurfacing raises the deck and alters piston-to-valve clearance and cam timing. This can cause interference or timing errors. Tracking total stock removed prevents the problem.

13. D — A bent connecting rod misaligns the piston and journal, causing uneven wear on that cylinder wall and its bearing. The misalignment loads the parts unevenly. One-sided wear is the telltale symptom.

14. C — Black smoke with low power and boost below command points to the air or exhaust (boost) system not delivering enough air. Insufficient air enriches the mixture and makes black smoke. Comparing actual to desired boost confirms the air-side fault.

15. A — A filter that restricts after brief cold running means the fuel has exceeded its cold filter plugging point, where wax crystals block the filter. This starves the engine. Winter fuel and a fuel heater address it.

16. A — A filter that will not regenerate with high back-pressure is excessively loaded with soot or ash. The restriction is the loading itself. Cleaning or forced regeneration restores flow, with ash requiring service.

17. B — Bubbles in the supply line with rough running and stalling indicate a suction-side air leak drawing air into the fuel. The air disrupts delivery. Sealing the suction side restores smooth running.

18. D — A bore larger at the top of ring travel than the bottom is taper, caused by the greatest wear where combustion force and heat are highest. The top-to-bottom difference is the taper value. It determines whether the bore can be honed or must be bored.

19. C — A valve that repeatedly burns after a rebuild usually had insufficient margin or poor seating, so it cannot shed heat and overheats. Adequate margin and a tight seat transfer heat into the head. Checking both prevents repeat burning.

20. B — Milky oil with rising coolant level points to an internal leak in the oil-to-coolant oil cooler mixing the two fluids. The cooler is a common internal crossover point. Pressure-testing it confirms the leak.

21. A — One-sided piston scuffing with a discolored crown points to a blocked piston oil-cooling jet letting that piston overheat. The jet normally carries heat from the piston underside. Clearing the jets prevents recurrence.

22. C — A downstream NOx sensor nearly equal to the upstream sensor shows little NOx is being converted, indicating a dosing or SCR catalyst fault. Effective reduction would show a much lower downstream value. The two-sensor comparison measures conversion efficiency.

23. D — Cold-start white smoke that clears with warmth, if fuel-related, points to low cetane causing ignition delay and incomplete combustion until warm. Higher cetane shortens that delay. Cetane directly governs cold-start behavior.

24. B — A vague complaint must first be defined by establishing when and how it occurs so it can be reproduced and later confirmed repaired. A reproducible fault is diagnosable. Defining the symptom prevents guesswork.

25. C — A pilot injection introduces a small fuel charge before the main event to soften the rapid pressure rise and reduce combustion noise. Common-rail pressure control enables it. It is a noise- and emissions-control strategy.

26. A — A reground valve must retain adequate margin so the thin edge does not overheat and burn. Too little margin cannot shed heat. Checking margin determines whether the valve is serviceable.

27. D — A water-in-fuel lamp means the separator has collected water that must be drained before it reaches the injection system. Draining removes the damaging contaminant. Ignoring it allows corrosion of high-pressure parts.

28. C — Poor boost off idle with carbon-coated vanes indicates carbon binding the variable vanes so they cannot close to build boost early. Sticking vanes are a common VGT fault. Cleaning or replacement restores boost response.

29. B — A wiped, heat-discolored bearing with no embedded grit indicates the oil film broke down from lost lubrication. Dirt contamination would instead embed grit and scratch. Reading the pattern identifies oil-film failure.

30. A — Low low-pressure supply starves the high-pressure pump, so it cannot build proper rail pressure, causing hard starting and low power. The pump can only pressurize what it is fed. Supply is checked before suspecting high-pressure parts.

31. D — A vibration that changes with engine rpm but not road speed originates in the engine, not the driveline. Driveline vibrations track road speed instead. Correlating to engine versus road speed localizes the source.

32. C — Freeze-frame data records the conditions present when the code set, which is most useful for reproducing a cold-morning-only fault. It is a diagnostic snapshot. This makes intermittent faults far easier to recreate.

33. A — The diesel oxidation catalyst supports active regeneration by oxidizing hydrocarbons to generate the heat that burns soot in the filter. It also converts CO and HC. Its heat-generating role is essential to regeneration.

34. B — Low oil pressure only when hot at idle points to worn bearings whose clearance lets the thinned hot oil escape faster. Cold, thicker oil masks the wear. Bearing clearance controls hot idle pressure.

35. D — Electronic unit injectors generate high pressure mechanically, driven by a camshaft lobe under electronic control. They use neither a shared rail nor high-pressure oil. Identifying this architecture shapes the diagnostic approach.

36. A — A gap under a straightedge across the deck indicates head warpage beyond specification, requiring machining. The feeler gauge measures the gap against the limit. This determines whether the head can be reused.

37. C — A cylinder returning far more fuel on a leak-off test has a worn injector leaking off excessively. The excess return isolates the failing unit. The test pinpoints the bad injector without disassembly.

38. B — A plugged particulate filter raises exhaust back-pressure that starves the turbine, so boost falls. The restriction limits the turbo's drive energy. This places a plugged DPF on the low-boost differential.

39. D — The fuel/water separator protects downstream high-pressure parts from water-induced corrosion and damage. Water is diesel fuel's most damaging contaminant. Scheduled draining preserves the injection system.

40. C — Comparing actual boost to commanded (desired) boost separates an air-side from a fuel-side cause of black smoke. A gap points to the air system; matching values shift suspicion to fueling. This comparison directs diagnosis efficiently.

41. A — A trouble code identifies a circuit, not always a failed part, so the circuit must be tested before replacing anything. Wiring and the monitored system can set the code. This interpretation prevents needless part replacement.

42. B — On a diesel the mass airflow sensor controls EGR flow and smoke-limits fueling based on the actual air mass. A contaminated MAF disturbs both functions. It does not set coolant temperature or charging.

43. D — Rotating the crank by hand after each torque step detects any binding before startup, catching a misassembly early. A bind found by hand is far cheaper than one found running. This is standard reassembly discipline.

44. C — A HEUI system actuates injection with high-pressure engine oil regulated by the injection pressure regulator (IPR) valve. Injection depends on the high-pressure oil system and oil condition. This distinguishes HEUI from common-rail and unit-injector designs.

45. B — Coolant dripping from the hole beneath the water-pump shaft is the designed indication of a failed pump shaft seal. The weep hole signals seal failure. Replacing the pump restores cooling-system integrity.

46. A — Multiple injection events per cycle in a common-rail system improve control of noise, emissions, and combustion quality independent of engine speed. The stored rail pressure enables this flexibility. These events are a defining advantage of common rail.

47. D — Selective catalytic reduction uses ammonia from DEF to convert NOx into harmless nitrogen and water vapor. It is the primary NOx-control technology on modern diesels. Proper dosing and catalyst function are required for compliance.

48. D — Rail pressure that holds at idle but drops under heavy flow points to a worn high-pressure pump short on volume. The wear is masked at low demand. Comparing commanded and actual pressure across load isolates the pump.

49. C — Aggressive abrasive discs can remove metal from an aluminum head and ruin the flatness needed to seal, especially with MLS gaskets. Preserving flatness and finish protects the seal. Careful cleaning avoids ruining the head.

50. A — The low-pressure lift pump's main role is to supply adequate fuel to the high-pressure pump so it can build rail pressure. The injectors, not the lift pump, atomize the fuel. Inadequate supply causes hard starting and low power.

51. B — A noise at one-half crankshaft speed points to the valve train, because the camshaft turns at half crank speed on a four-stroke engine. Rod and main noises track crankshaft speed. This timing clue localizes the source.

52. C — Cetane number measures the fuel's readiness to autoignite; higher cetane shortens ignition delay for smoother starting and combustion. It is the opposite of gasoline octane, which resists ignition. Cetane governs cold-start and noise behavior.

53. A — A charge-air cooler cools the compressed intake air to raise its density, packing more oxygen into the cylinder for more power and lower combustion temperature. It works on intake air, not exhaust. Denser air is the reason intercooling improves output.

54. D — Out-of-round is found by measuring the bore in two directions at the same depth and comparing them. The difference is the out-of-round value. Detecting it determines whether the bore can be honed or must be machined.

55. B — Biodiesel's solvent effect loosens existing deposits in the system, and that debris plugs the filter shortly after first use. It does not raise sulfur or block all filtration. Anticipating early filter plugging is part of servicing biodiesel.

56. C — Low-SAPS oil limits sulfated ash, phosphorus, and sulfur to protect the particulate filter and catalysts from contamination and plugging. The correct oil preserves after-treatment life. The wrong oil accelerates ash loading.

57. A — An engine that runs cold with white smoke and failed regenerations points to a thermostat stuck open, never reaching operating temperature. That is the defining clue. The other choices cause overheating or external leaks.

58. D — A variable-geometry turbo can close its vanes to raise exhaust back-pressure on command, supporting both regeneration and exhaust braking. This dual capability is unique to VGTs. It links the air system to after-treatment and braking.

59. B — A suction-side restriction starves the high-pressure pump, causing fuel starvation and power loss that worsen under load. The pump cannot draw enough fuel. Clearing the restriction restores supply.

60. B — A new injector that runs rough with a balance code despite testing good was installed without programming its calibration code. The ECM cannot correct for the injector's variation without it. Programming the code resolves the rough running.