

PRACTICE EXAM 9: ASE C1 SIMULATION (50 QUESTIONS)

Recommended time: 75 minutes. Domain distribution: 23 Communications / 18 Product Knowledge / 9 Shop Operations. Content angles distinctly different from Exams 1, 2, 3, and 4.

1. A customer arrives in obvious distress saying they need help "right now" because their vehicle is making a strange noise. The consultant should:

- A. Refuse service until the customer schedules a proper appointment in advance
- B. Charge an emergency-service surcharge above the standard labor rate for the unscheduled visit
- C. Ignore the distress and proceed with the standard intake form to maintain shop process
- D. Calm the customer, assess the concern, and explain what the shop can realistically do today

2. The octane rating of gasoline indicates the fuel's:

- A. Volume of energy released per gallon during the combustion process
- B. Speed at which the fuel evaporates after it is dispensed into the fuel tank
- C. Resistance to premature ignition (knock or detonation) under engine compression
- D. Approximate burn temperature inside the combustion chamber during normal operation

3. A customer asks the consultant to reduce the shop's labor rate for their repair. The consultant should:

- A. Reduce the labor rate by ten percent to retain the customer's authorization for the work
- B. Refuse the request bluntly and tell the customer to find another shop if the rate is too high
- C. Explain the shop's published labor rate, what it covers, and the value the customer receives
- D. Refer the customer directly to the shop owner for any discussion of the published labor rate

4. The cylinder head gasket on an internal combustion engine functions to:

- A. Filter the engine oil before it enters the cylinder head's valve train assembly
- B. Seal the cylinder head to the engine block, containing combustion pressure and fluids
- C. Pressurize the engine cooling system as the head reaches operating temperature
- D. Provide the threaded fasteners that secure the cylinder head to the engine block

5. A customer threatens legal action over a disputed repair charge. The consultant should:

- A. Match the customer's escalation by threatening counter-action if the matter goes to court
- B. Remain calm, document the conversation, and escalate to management per the shop's policy
- C. Apologize and immediately offer a full refund regardless of the merit of the customer's claim
- D. Refuse to discuss any aspect of the matter until the customer formally retains legal counsel

6. Automatic emergency braking (AEB) systems on modern vehicles detect an imminent collision and:

- A. Disable the vehicle's brake system to prevent driver overreaction during emergencies
- B. Reduce the engine's idle speed to prevent the vehicle from rolling at intersections

C. Lock the transmission into park automatically if the driver does not respond at all

D. Apply the brakes automatically to prevent or reduce the severity of a forward collision

7. A customer offers to pay cash and asks the consultant to skip the invoice "to keep it simple." The consultant should:

A. Accept the cash and skip the invoice as the customer requested for simplicity today

B. Charge a small discount for the cash payment to acknowledge the paperwork savings

C. Decline the request, explain that all transactions require an invoice, and complete it normally

D. Accept the cash but create a partial invoice listing only the parts cost on the document

8. A brake rotor that has been machined to (or below) the manufacturer's stamped minimum thickness:

A. Provides better braking performance than a thicker rotor due to reduced rotating weight

B. May be reused safely as long as no visible cracks or warpage are present in the surface

C. Requires only a thorough cleaning and surface preparation before being returned to service

D. Must be replaced because the rotor no longer has adequate material to dissipate heat safely

9. A customer asks a deliberately challenging technical question to "test" the consultant's knowledge. The consultant should:

A. Answer to the best of their knowledge, acknowledge limits, and offer to consult the technician

B. Provide a confident answer regardless of accuracy to demonstrate broad expertise to the customer

C. Refuse to answer the question and direct the customer to find another shop for service today

D. Tell the customer that testing the consultant's knowledge is inappropriate during a service visit

10. A customer asks to ride along with the technician on a diagnostic test drive. The consultant should:

A. Check the shop's insurance and policy on customer ride-alongs before agreeing to the request

B. Allow the customer to ride along immediately without any consideration of insurance or policy

C. Refuse the request because the customer's presence interferes with diagnostic procedures

D. Allow the customer to drive their own vehicle while the technician rides as a passenger only

11. Most modern passenger vehicle engine blocks are made of:

A. Solid steel because of its exceptional strength under combustion pressure conditions

B. Magnesium alloy because of its very low weight and high corrosion resistance

C. Cast iron or aluminum alloy, with aluminum increasingly common for weight reduction

D. Composite carbon fiber because of its strength-to-weight ratio in modern applications

12. A customer asks whether the shop's technicians are ASE certified. The consultant should:

A. Refuse to discuss technician credentials since they are private personnel information

B. Provide accurate information about which technicians hold which ASE certifications

C. Tell the customer that ASE certification is not relevant to the quality of the shop's work

D. Direct the customer to research ASE certifications independently from the shop's website

13. A V-configuration engine differs from an inline engine in that the V-engine has:

- A. Cylinders arranged in two banks at an angle, sharing a common crankshaft beneath them
- B. Cylinders arranged horizontally opposing each other on either side of the crankshaft
- C. A single bank of cylinders arranged in a row above one common crankshaft
- D. Cylinders arranged in a circular pattern around a single common rotating output shaft

14. A customer arrives accompanied by a service animal (a recognized assistance dog). The consultant should:

- A. Welcome the customer and animal normally, respecting the service animal's working status
- B. Ask the customer to leave the service animal outside or in their vehicle during the visit
- C. Pet the service animal to demonstrate the shop's friendliness toward all visiting customers
- D. Refuse service to the customer if the shop has a no-animals policy posted at the entrance

15. The procedure for bleeding the brake hydraulic system after caliper replacement removes:

- A. Brake dust and friction material that has accumulated inside the caliper assembly recently
- B. Wear particles from the inside of the brake fluid reservoir during normal driving
- C. Heat from the brake fluid before it returns to the reservoir from the calipers
- D. Air trapped in the system, which causes a soft pedal and reduced braking force

16. A customer says, "I just need it to be safe to drive home — the cheapest, fastest fix is fine." The consultant should:

- A. Provide the cheapest possible repair regardless of the actual safety implications
- B. Refuse the request and insist on a complete repair that addresses all the issues at once
- C. Charge the customer extra for the inconvenience of providing a non-standard cheap repair
- D. Discuss the minimum safe repair, explain its limitations, and document the customer's choice

17. A customer arrives 30 minutes late for their scheduled appointment. The consultant should:

- A. Refuse to perform any service today and reschedule the customer for the following week
- B. Assess current capacity, communicate honestly about timing, and proceed if possible
- C. Charge a late-arrival fee to compensate the shop for the disrupted appointment schedule
- D. Pretend the late arrival was not an issue and overpromise the original completion time

18. A "boxer" or flat-opposed engine has:

- A. Cylinders arranged horizontally opposite each other, with pistons moving away from each other
- B. Cylinders arranged in two banks meeting at an angle above a common crankshaft assembly
- C. Cylinders arranged in a single row above the crankshaft in the typical inline configuration
- D. Cylinders arranged in a rotary pattern around a single rotating combustion chamber assembly

19. A customer asks the consultant to record a higher repair cost on the invoice "for insurance purposes" while paying the actual lower amount in cash. The consultant should:

- A. Comply with the request since the customer is offering to pay the actual lower amount
- B. Reduce the labor rate to allow the customer to claim the difference under their insurance policy

- C. Provide the higher amount on the invoice but only when the customer's insurance company requires it
- D. Decline the request, explain that the shop documents actual costs, and offer to help legitimately

20. A customer offers a cash tip to the consultant at the end of a successful visit. The consultant should:

- A. Decline politely (or accept per the shop's policy), thank the customer, and reinforce shop service value
- B. Accept the tip without acknowledging it to avoid an awkward conversation at the moment
- C. Demand a larger tip if the customer's offered amount is below the consultant's expectation
- D. Refuse the tip and lecture the customer on the inappropriateness of tipping in the trade

21. A vehicle left at the shop after the repair is complete and the customer has been notified is typically:

- A. Returned to the customer's residence by the shop at no charge to maintain good will
- B. Subject to storage fees that begin after a defined notification and waiting period per policy
- C. Donated to charity immediately once the customer fails to respond to the first call attempt
- D. Sold by the shop without notice to recover the cost of the completed service work

22. Dynamic wheel balancing differs from static balancing in that dynamic balancing:

- A. Eliminates the need for periodic tire rotation in normal passenger vehicle service
- B. Corrects both vertical and side-to-side wheel imbalance as the wheel spins during testing
- C. Is performed only on heavy commercial truck wheels and not on passenger vehicle wheels
- D. Uses heavier wheel weights placed at random locations around the wheel's outer circumference

23. A customer asks the consultant for a recording of an earlier phone call between them. The consultant should:

- A. Provide the recording immediately without checking the shop's call-recording policy
- B. Refuse the request and tell the customer that no shop ever records phone calls
- C. Lie to the customer that the call was not recorded to avoid the request entirely
- D. Check the shop's call-recording policy and applicable state law before responding

24. Modern electronic cruise control systems maintain a set speed by:

- A. Using a mechanical vacuum servo connected to the throttle cable on the engine
- B. Engaging a transmission lock that prevents the vehicle from shifting out of high gear
- C. Sending throttle position commands through the engine control module to the throttle actuator
- D. Reducing the vehicle's tire pressure automatically to slow the vehicle as needed

25. A customer asks why some vehicle repairs seem to require dealership-only equipment. The consultant should:

- A. Explain that some manufacturer software is restricted but Right to Repair laws are expanding access
- B. Refuse to discuss the topic and direct the customer to file a complaint with the manufacturer
- C. Tell the customer that all repairs can be performed by any shop with no restrictions today
- D. Avoid the topic entirely and complete the current visit's authorized work without comment

26. Before charging an air conditioning system with refrigerant after a major repair, the system must be:

- A. Heated to operating temperature using the vehicle's normal cooling system circulation
- B. Pressurized with the customer's selected refrigerant before any vacuum is applied to it
- C. Evacuated with a vacuum pump to remove air, moisture, and any non-condensable gases
- D. Cleaned internally with a special solvent flush available only at dealership service facilities

27. A customer shows strong emotional attachment to an older vehicle that requires expensive repairs. The consultant should:

- A. Pressure the customer to replace the vehicle since the emotional attachment is irrational
- B. Refuse to perform the repair on a vehicle that the customer is emotionally attached to
- C. Ignore the emotional context and present only the technical and financial analysis without regard
- D. Respect the attachment, present options honestly, and let the customer decide on the next step

28. Heated seats in a typical passenger vehicle use what mechanism to warm the seat surface?

- A. An electric heating element built into the seat cushion and seatback, powered by the vehicle
- B. Engine coolant routed through tubes inside the seat from the heater core circuit
- C. Exhaust gas redirected through small tubes inside the seat for heat recovery on cold mornings
- D. Friction heat generated by the movement of seat occupants during normal vehicle operation

29. A customer who insists they are "in a hurry" but refuses to authorize the work needed for completion is:

- A. Sending mixed signals — the consultant should clarify the customer's actual priorities first

- B. Demonstrating efficient use of the shop's time by avoiding unnecessary authorization discussions
- C. Following federal consumer protection regulations that prohibit immediate authorization of service
- D. Asking the consultant to perform the work without authorization to save time during this visit

30. A diagnostic procedure requires the technician to road-test the customer's vehicle. The consultant should:

- A. Schedule the road test without informing the customer to keep the diagnostic process efficient
- B. Inform the customer that a road test is part of the diagnostic process and document its purpose
- C. Charge the customer an additional road-test fee above the standard diagnostic charge
- D. Allow the customer to perform the road test themselves while the technician rides as a passenger

31. A "parallel" hybrid powertrain differs from a "series" hybrid powertrain in that the parallel hybrid:

- A. Uses only the electric motor for propulsion, with the engine acting solely as a generator
- B. Operates the engine exclusively on the highway and the motor exclusively in city driving
- C. Can use either the engine or the electric motor (or both) to drive the wheels mechanically
- D. Has no mechanical connection between the engine and the wheels at any operating condition

32. The stoichiometric air-fuel ratio for gasoline combustion is approximately:

- A. 7.5:1 air to fuel by weight for complete combustion in normal vehicle operation
- B. 10.3:1 air to fuel by weight for partial combustion in normal vehicle operation
- C. 14.7:1 air to fuel by weight for complete combustion of the fuel charge

D. 22.5:1 air to fuel by weight for lean burn during cruise operation conditions

33. A customer who failed to show for their previous appointment now wants to be fit in immediately. The consultant should:

- A. Refuse service categorically to teach the customer the importance of appointment commitments
- B. Charge a substantial no-show penalty fee before scheduling any new appointment for the customer
- C. Schedule the new appointment for the latest possible time and avoid further accommodation
- D. Acknowledge the situation, assess current capacity, and offer the next reasonable available slot

34. The power window regulator in a vehicle's door functions to:

- A. Filter the air entering the door's HVAC vents when the window is rolled down
- B. Convert electric motor rotation into the up-and-down motion of the window glass
- C. Generate the electrical signal required to operate the door's remote keyless entry system
- D. Lubricate the door's hinge pins to ensure smooth opening and closing during normal use

35. A second follow-up call to a customer goes unanswered after a voicemail message was left previously. The consultant should:

- A. Send a brief text or email noting the previous attempts and inviting the customer to respond
- B. Continue calling repeatedly throughout the day until the customer answers the consultant's call
- C. Document the unsuccessful attempts and abandon any further customer contact attempts
- D. Visit the customer's home address in person to deliver any urgent message in question today

36. Modern connected vehicles increasingly receive software updates over the air (OTA), which means:

- A. The updates are mechanically installed via a USB drive during the dealership service visit
- B. The vehicle must visit a dealership service department to physically receive the updates
- C. Updates are delivered via the vehicle's cellular data connection without a shop visit required
- D. The vehicle's onboard computer requires the customer to manually type in the update code

37. When a new technician joins the shop, the consultant should introduce the technician to long-term customers by:

- A. Avoiding the topic since technician changes are operationally invisible to the customer
- B. Apologizing for the change in technician and asking the customer's permission to use them
- C. Mentioning the new technician's credentials and how they fit into the shop's overall service team
- D. Refusing to assign the new technician to the customer until the customer has met them first

38. A customer asks for the shop's warranty terms in writing before authorizing the repair. The consultant should:

- A. Provide the written warranty terms and review them with the customer before authorization
- B. Tell the customer the warranty is implied and need not be provided in any specific written form
- C. Charge the customer an additional fee for printing and providing the written warranty terms
- D. Refuse to provide written warranty terms since the customer should trust the shop's word

39. The Atkinson cycle engine — common on hybrid vehicles — differs from the conventional Otto cycle engine by:

- A. Using diesel fuel exclusively in place of gasoline for greater fuel efficiency at idle
- B. Eliminating the need for an oxygen sensor in the engine's exhaust monitoring system
- C. Operating without a throttle plate, relying entirely on variable valve lift control instead
- D. Holding the intake valve open during part of the compression stroke for higher expansion

40. A confident, well-presented written estimate at the time of recommendation typically results in:

- A. Lower customer authorization rates because written estimates feel impersonal to customers
- B. Higher customer authorization rates because the customer can review and consider the work
- C. Identical authorization rates compared to verbal-only estimates regardless of customer preference
- D. Lower customer trust because the written estimate appears to commit the shop unnecessarily

41. A nonprofit or government customer that presents valid tax-exempt documentation at the shop should:

- A. Have the sales tax removed from the invoice with documentation retained in shop records
- B. Pay the sales tax anyway and apply for a refund directly with the state tax authority
- C. Be told that the shop cannot accommodate tax-exempt customers regardless of any documentation
- D. Have their entire repair cost discounted to reflect the tax exemption they have presented

42. A driver of a hybrid or electric vehicle may notice that the brake pedal feels different from a conventional vehicle because the brake system:

- A. Uses brake fluid that is significantly thinner than conventional brake fluid in cold weather
- B. Operates with a vacuum brake booster connected to the high-voltage battery cooling system

- C. Has friction pads made of carbon-ceramic material instead of conventional friction pad material
- D. Blends regenerative motor braking with friction braking to maximize energy recovery from stops

43. A customer asks why their tire pressure warning came on even though they checked all four tires manually. The consultant should:

- A. Tell the customer the warning is always a false alarm and ignore it for the time being
- B. Refuse to discuss the warning since the customer has already checked the tires themselves
- C. Tell the customer to drive faster to reset the tire pressure monitoring system computer
- D. Explain that TPMS may need recalibration after pressure changes or may indicate a sensor issue

44. The published cabin air filter replacement interval on most modern passenger vehicles is approximately:

- A. Every 100,000 miles, since the cabin filter is designed for the vehicle's expected lifetime
- B. Every 15,000 to 30,000 miles, depending on the vehicle and the customer's driving conditions
- C. Every 75,000 to 100,000 miles, matching the powertrain warranty's coverage duration period
- D. Determined exclusively by visual inspection without any published mileage interval guidance

45. A heated steering wheel uses what mechanism to provide warmth to the driver's hands?

- A. Engine coolant routed through the steering column from the engine cooling system
- B. The friction heat generated by the steering rack during normal vehicle operation
- C. An electric heating element embedded within the steering wheel rim and grip area

D. Warm cabin air directed through small vents inside the steering wheel's central hub

46. A shop's discount policy for first responders, military, or seniors is typically:

- A. Required by federal law and applies uniformly to every automotive service shop nationwide
- B. Defined by the shop's own policy, with clear eligibility requirements and discount amount documented
- C. Prohibited by federal regulations because discount policies create discriminatory service practices
- D. Determined by the consultant on a case-by-case basis at the time of each individual transaction

47. A customer complains to the consultant about a specific technician's behavior in the shop. The consultant should:

- A. Defend the technician immediately without considering the customer's specific complaint at all
- B. Listen carefully, document the complaint, and follow the shop's process for personnel concerns
- C. Tell the customer that technician behavior is none of the consultant's professional concern
- D. Promise the customer that the technician will be terminated immediately after the visit ends

48. A customer asks the shop to perform some of the recommended work but indicates they will take the rest of the work to another shop. The consultant should:

- A. Honor the customer's decision, perform the authorized work, and note deferred items in their file
- B. Refuse to perform any of the work unless the customer authorizes the entire recommendation
- C. Charge an additional fee to discourage the customer from splitting the work between shops
- D. Tell the customer that splitting the work is unsafe and refuse to release the vehicle today

49. A vehicle manufacturer's recommended automatic transmission fluid service interval is typically:
- A. Never — modern transmissions use "lifetime" fluid that does not require service intervention
 - B. Every 3,000 miles, matching the historical engine oil change interval for older vehicles
 - C. Every 30,000 to 100,000 miles depending on the vehicle and operating condition severity
 - D. Every 250,000 miles for both normal and severe service conditions across all vehicle types
50. When the shop installs customer-supplied parts (per the shop's policy), the labor warranty offered on that installation is typically:
- A. Identical to the labor warranty on shop-supplied parts since the labor is performed identically
 - B. Reduced or limited compared to shop-supplied parts, since the shop did not source the part
 - C. Extended beyond the shop's normal labor warranty to compensate the customer for sourcing the part
 - D. Eliminated entirely because the shop is unwilling to install customer-supplied parts at all

Practice Exam 9 — Answer Explanations

- 1. D** — A customer in distress needs calm assessment, honest communication about current capacity, and a realistic plan — not refusal, surcharges, or rote intake. Treating the human moment with care while still applying professional process turns a panicked arrival into a productive visit. The calm-assess-explain pattern is the standard de-escalation response at intake.
- 2. C** — Octane rating measures gasoline's resistance to premature ignition (knock or detonation) under engine compression, not its energy content, evaporation rate, or burn temperature. Higher-compression engines and turbocharged engines require higher-octane fuel because the fuel must not pre-ignite before the spark plug fires. Using lower-octane fuel than the manufacturer specifies can cause audible knock and long-term engine damage.
- 3. C** — A labor-rate negotiation request is best handled by explaining what the published rate covers and the value the customer receives — not by reducing the rate (which damages shop margins and sets

precedent), refusing bluntly, or deflecting to the owner. Most rate questions reflect price uncertainty, not a fixed objection, and a value explanation often satisfies the question. The published rate is the published rate.

4. B — The head gasket seals the joint between the cylinder head and the engine block, containing combustion pressure inside the cylinders while keeping coolant and oil in their separate passages where they cross the joint. Gasket failure can produce coolant in oil, oil in coolant, combustion gases in coolant, white exhaust smoke, or external leaks — depending on which section of the gasket failed. The gasket itself is a sealing component, not an oil filter, pressure source, or fastener.

5. B — Legal threats require composure, careful documentation of the conversation, and prompt escalation through the shop's defined process for these situations — not counter-threats, panicked refunds, or refusal to engage. Matching escalation worsens the dispute and can harm the shop's later position; reflexive refunds reward the threat and invite repetition. Calm-document-escalate is the disciplined response.

6. D — AEB systems use forward-looking sensors (camera, radar, sometimes LiDAR) to detect an imminent collision and apply the brakes automatically — either reducing impact severity or preventing the collision entirely when the time-to-collision window allows. The system supplements (and does not replace) the driver's own braking. Disabling brakes, reducing idle, or locking the transmission are not AEB functions.

7. C — All transactions require a complete invoice — for tax compliance, warranty support, the customer's record, and the shop's audit trail. A "skip the invoice" request, however casually framed, falls outside acceptable practice and should be declined politely with an explanation. Accepting the cash, offering a discount, or producing a partial invoice all compromise the shop's compliance posture.

8. D — The manufacturer's stamped minimum thickness is the rotor's "discard" specification — below it, the rotor lacks the mass needed to absorb and dissipate the heat that braking generates, which leads to fade, warpage, and accelerated wear of the new pads. A rotor at or below this number must be replaced regardless of visible condition. Visual inspection alone cannot judge whether enough material remains.

9. A — A "testing" question is best answered honestly to the extent of the consultant's knowledge, with frank acknowledgment of any limit and an offer to bring in the technician for the technical depth. Confident-but-wrong answers undermine trust the moment they are caught; refusal and confrontation fail the customer's reasonable interest. Honest competence, calmly delivered, is what passes the test.

10. A — Ride-along policies vary by shop and by insurance carrier, and the consultant should check both before agreeing rather than offering a blanket yes or no. Some shops allow ride-alongs with a signed acknowledgment; others restrict them entirely. The customer driving while the technician rides as passenger inverts the diagnostic relationship and is not a substitute for the technician's road test.

11. C — Modern passenger-vehicle engine blocks are made of cast iron (durable, inexpensive, traditional) or aluminum alloy (lighter, used increasingly for fuel-economy and emissions reasons), and many manufacturers now use aluminum even on truck engines. Solid steel, magnesium, and carbon fiber

are not standard engine-block materials. Block material affects weight, heat transfer, and machining requirements during service.

12. B — Customers reasonably want to know the credentials of the people working on their vehicle, and the consultant should provide accurate information about which technicians hold which ASE certifications — including the shop's overall certification posture. Refusing to discuss credentials, deflecting the question, or sending the customer to research independently all undersell what is typically a strong selling point for shops with certified technicians.

13. A — A V-configuration engine arranges its cylinders in two banks set at an angle to each other (typically 60° or 90°), with both banks sharing a single crankshaft running through the V. The configuration is shorter than an equivalent inline engine and lower than the horizontally-opposed boxer layout. Rotary engines use no reciprocating cylinder arrangement at all.

14. A — Service animals are working animals protected by accessibility laws, and the customer and animal should be welcomed normally — the animal is performing a task and is not a pet. Asking to leave the animal outside, attempting to interact with the working animal, or refusing service all fail legal and ethical standards. Routine intake proceeds as it would for any other customer.

15. D — Brake fluid is hydraulic; air is compressible, and any air trapped in the system after a caliper replacement (or other line opening) compresses under pedal pressure instead of transferring force to the pads, producing a soft pedal and reduced stopping force. Bleeding flushes that air out at each wheel until only fluid emerges. Brake dust, reservoir particles, and brake-system heat are not what bleeding removes.

16. D — A "minimum safe to drive home" request is a legitimate customer choice, and the consultant should discuss what the minimum repair actually includes, explain its limitations honestly (what is not being fixed, what risks remain), and document the customer's informed authorization. Defaulting to the cheapest option without context, refusing to accommodate the request, or surcharging the customer all fail the situation.

17. B — A late arrival requires honest reassessment of what the shop can do today within current capacity, communicated transparently to the customer — proceed if possible, reschedule if not. Outright refusal punishes the customer for a single missed window; late-arrival fees are uncommon in independent shop service; pretending the delay didn't happen sets up an overpromise the shop cannot keep.

18. A — A boxer (flat-opposed) engine places its cylinders horizontally on either side of the crankshaft, with the pistons moving away from and toward each other rather than up and down. The low, wide layout lowers the vehicle's center of gravity and is associated with Subaru and Porsche. V-banks, inline rows, and rotary chambers describe other engine configurations.

19. D — A request to record a false higher amount on the invoice is insurance fraud, and the consultant must decline regardless of how it is framed. The honest path is to document actual costs accurately, offer to help the customer understand legitimate coverage, and escalate if the customer pressures further.

Complying, restructuring labor rates, or producing a higher amount conditionally all expose the shop and the consultant to fraud liability.

20. A — A tip is offered as appreciation, and the appropriate response depends on the shop's tipping policy: polite decline with thanks if shop policy prohibits tips, or gracious acceptance with thanks if policy allows. Either way the consultant reinforces that the shop's service quality is the standard, not a tip-driven exception. Silent acceptance, demanding more, or lecturing the customer all mishandle a friendly gesture.

21. B — Shops generally have written storage-fee policies that begin charging after defined notification and a waiting period — protecting both the customer (clear expectations) and the shop (legitimate cost recovery for occupied space). Free return, immediate donation, or sale without notice are not standard practices; state lien laws govern eventual sale of truly abandoned vehicles after proper notice.

22. B — Dynamic balancing spins the wheel on the balancing machine and corrects both static (vertical hop) and couple (side-to-side wobble) imbalance — placing weights on both the inner and outer rim flanges as the machine directs. Static-only balancing addresses just vertical imbalance and is insufficient for modern passenger wheels. Dynamic balancing does not eliminate the need for rotation and is standard for passenger as well as truck wheels.

23. D — Call-recording practices vary by shop and by state law (one-party vs. two-party consent), and the consultant should check both the shop's policy and applicable law before responding. Some shops record calls and provide recordings on request; others do not record at all. Immediate release, blanket denial, or deception each fail the proper disclosure framework.

24. C — Modern electronic cruise control sends a throttle position command through the engine control module to the drive-by-wire throttle actuator, which adjusts opening to maintain the set vehicle speed against grade and load changes. Older vacuum servos pulled on the throttle cable mechanically. Transmission locks and tire pressure changes are not how cruise control regulates speed.

25. A — Repair access varies by manufacturer software, proprietary diagnostic tools, and security gateways — and Right to Repair laws (federal initiatives plus state laws, notably Massachusetts) are progressively expanding independent-shop access. The honest consultant explains the current restriction, mentions the broader access trend, and helps the customer understand their options. Refusing to discuss, claiming no restrictions, or avoiding the topic all fail the customer's reasonable question.

26. C — Before any refrigerant charge, the AC system must be evacuated with a vacuum pump to remove air, moisture, and non-condensable gases that would otherwise reduce cooling efficiency and damage the compressor over time. Moisture is the critical concern — it forms corrosive acids when combined with refrigerant. Heating, pre-pressurizing, or solvent flushing are not part of standard charge procedure.

27. D — Emotional attachment to a vehicle is a legitimate part of the customer's decision context, and the consultant's role is to respect the attachment, present the technical and financial options honestly, and let the customer decide whether the repair is worth it to them. Pressuring replacement, refusing the work, or ignoring the human context all fail the customer-care standard.

- 28. A** — Heated seats in modern passenger vehicles use electric resistance heating elements embedded in the seat cushion and seatback, drawing power from the vehicle's 12V system through a switch and thermal control circuit. Engine coolant, exhaust gas, and occupant friction are not used to heat seats. Element failure or wiring damage in the seat are the common causes of heated-seat complaints.
- 29. A** — The "in a hurry but won't authorize" pattern reflects competing priorities the customer hasn't yet resolved, and the consultant's job is to surface the conflict — naming the trade-off and clarifying what matters most to the customer right now. Treating the contradiction as efficient, citing nonexistent federal regulation, or doing the work unauthorized all skip the conversation the customer actually needs.
- 30. B** — Diagnostic road tests are part of the diagnostic process, and the customer should be informed before the technician takes the vehicle out — covering purpose, expected duration, and that the test is part of the diagnostic fee. Quiet road tests breed suspicion; surcharging a routine diagnostic step is inappropriate; customer-driven diagnostic road tests are not the standard procedure.
- 31. C** — A parallel hybrid keeps a mechanical connection between the engine and the driven wheels, with the electric motor either replacing or supplementing the engine depending on conditions. A series hybrid uses the engine only as a generator, with the wheels driven by the electric motor alone. Most production hybrids are parallel or "series-parallel" power-split designs that can operate in either mode.
- 32. C** — Stoichiometric combustion of gasoline requires approximately 14.7 parts air to 1 part fuel by weight — the ratio at which all fuel and all oxygen are consumed with no excess of either. Engine control systems target this ratio at most operating points using oxygen sensor feedback, with brief deviations richer (acceleration) or leaner (cruise) under specific conditions. The 14.7:1 figure is foundational to engine management.
- 33. D** — A customer who missed an appointment and now wants help has effectively become a walk-in, and the consultant should acknowledge the situation, assess current capacity honestly, and offer the next reasonable slot — same day if possible, soon if not. Categorical refusal, punitive fees, or deliberately late scheduling damage the relationship over a single missed visit.
- 34. B** — The window regulator is the mechanism that converts the motor's rotation into the up-and-down motion of the glass — using a scissor linkage, cable-and-pulley, or rack-and-pinion design depending on the manufacturer. Worn cables, broken plastic clips, or motor failures are the common service items in this assembly. The regulator is unrelated to HVAC, keyless entry, or hinge lubrication.
- 35. A** — After voicemail and a second missed call, a brief text or email is the appropriate next channel — it documents the contact attempt, gives the customer time to respond on their schedule, and avoids the harassing pattern of repeated calls. Continuous calling, abandoning the contact attempt, or showing up in person each fail the proportionate follow-up standard.
- 36. C** — Over-the-air updates are delivered through the vehicle's built-in cellular data connection (sometimes Wi-Fi at home), allowing the manufacturer to push software updates to the vehicle's electronic control modules without a shop visit. The vehicle typically prompts the customer to authorize and schedule installation. USB delivery, mandatory dealer visits, and manual code entry are not how OTA works.

- 37. C** — Introducing a new technician by credentials and team role positions the change as additive to the shop's capability — not an apology, not a permission request, and not avoidance. Long-term customers appreciate transparency about who is working on their vehicle, and a brief, confident introduction builds trust in the broader service team rather than just one technician.
- 38. A** — Written warranty terms are a reasonable customer request, and the appropriate response is to provide them and walk through the key points before authorization — what is covered, for how long, what is excluded, how claims work. Implying the warranty without writing it, surcharging the customer, or refusing to provide written terms each fail Magnuson-Moss expectations and the customer's reasonable due diligence.
- 39. D** — The Atkinson cycle holds the intake valve open during the early part of the compression stroke, allowing some of the intake charge to push back into the manifold before compression begins — producing an effective compression ratio lower than the expansion ratio. The higher expansion ratio extracts more work from the same fuel, improving efficiency at the cost of peak power. The cycle pairs well with hybrid powertrains that can use the electric motor for the lost peak power.
- 40. B** — A clear written estimate provides the customer with a document they can review, compare, share with a spouse, and refer back to — and the documented professional presentation typically raises authorization rates compared to verbal-only pricing. Customers who feel rushed verbally often hesitate; customers who can read often authorize. The written estimate is one of the most effective sales tools at the service counter.
- 41. A** — Valid tax-exempt documentation (resale certificate, government exemption, nonprofit exemption) means the sales tax line on the invoice should be zero, and the documentation goes into the shop's records to support the exemption if audited. Charging the tax and asking the customer to refund-claim, refusing tax-exempt customers, or discounting the entire repair each mishandle the exemption.
- 42. D** — Hybrid and EV brake systems blend regenerative braking (the electric motor acting as a generator, slowing the vehicle while recovering energy) with conventional friction braking — and the blending control logic produces a pedal feel that can seem firmer, softer, or differently progressive than a conventional system. Customer pedal-feel complaints on hybrid/EV vehicles are often this blending characteristic rather than a fault.
- 43. D** — TPMS warnings can be triggered by actual low pressure, recent ambient temperature change (pressure drops about 1 psi per 10°F), failure to perform a relearn after rotation or pressure adjustment, or a failing sensor (low battery, damaged sensor). The consultant explains the possible causes and offers a TPMS check at the shop. Dismissing the warning, refusing to engage, or telling the customer to "drive faster" each fail the customer's safety concern.
- 44. B** — Most manufacturers publish a cabin air filter interval between 15,000 and 30,000 miles, with shorter intervals for dusty or high-pollen driving environments. The filter is not a lifetime part, and visual inspection during regular service is the practical check between scheduled replacements. The 100,000-mile and 75,000-mile figures are not standard cabin-filter recommendations.

45. C — Heated steering wheels use an electric resistance heating element embedded in the wheel's rim — typically under the leather or wrap — powered through a slip ring or clock spring contact in the steering column. Coolant routing, friction heat, and cabin air ducting are not how the feature works. Failure modes include element breaks and clock-spring contact issues, both of which typically require column-area service.

46. B — Promotional discount policies for first responders, military, seniors, students, or other groups are defined at the shop level (or franchise level), with eligibility documentation and discount amount set in the shop's policy — not by federal law, not prohibited by regulation, and not by consultant discretion. Consistent application of the documented policy avoids the appearance of favoritism while still rewarding the targeted customer groups.

47. B — A complaint about a specific technician deserves careful listening, written documentation, and routing through the shop's personnel-concern process — including any required notification of the technician's supervisor or the shop owner. Defending the technician immediately, dismissing the concern, or promising termination all fail the disciplined response that protects both the customer's voice and the employee's due process.

48. A — Customers have the right to authorize partial work and decline or defer the rest, and the consultant should honor the choice, complete the authorized work professionally, and document the deferred items in the customer's file for future reference. Refusing partial authorization, surcharging the customer, or claiming the partial repair is unsafe (when it is not) each overreach the consultant's role.

49. C — Manufacturer-recommended ATF service intervals on most modern vehicles fall between 30,000 and 100,000 miles, with severe-service intervals shorter than normal-service intervals. "Lifetime fluid" claims have been increasingly walked back across the industry as field experience shows that periodic ATF service extends transmission life. Neither the 3,000-mile interval nor the 250,000-mile interval matches manufacturer guidance.

50. B — When the customer supplies the part, the shop did not source it, cannot verify its quality or warranty, and cannot return it under the supplier's terms — so the labor warranty on that installation is typically reduced or limited compared to shop-supplied parts (and clearly disclosed before installation). Identical warranties, extended warranties, or complete refusal each fail to match the standard policy in shops that accept customer parts.