

PRACTICE EXAM 5: A7 SIMULATION

— HEATING AND AIR CONDITIONING

1. The proper R-134a low-side pressure specification at idle (with 90°F ambient) is approximately:

- A. Apply maximum pressure available
- B. Replace the refrigerant as a precaution
- C. Approximately 30-45 psi for typical operating conditions
- D. Visually inspect for visible damage only

2. The proper R-134a high-side pressure specification at idle (with 90°F ambient) is approximately:

- A. Approximately 200-250 psi for typical operating conditions
- B. Apply maximum pressure available
- C. Replace the refrigerant as a precaution
- D. Visually inspect for visible damage only

3. The proper procedure for measuring R-134a system pressures is to:

- A. Apply compressed air to the system
- B. Replace the refrigerant as a precaution
- C. Replace the gauges as a precaution
- D. Connect manifold gauges to the proper service ports, run the A/C system, and observe the pressures at varied conditions

4. The proper R-1234yf low-side pressure specification at idle is approximately:

- A. Apply maximum pressure available
- B. Approximately 25-40 psi for typical operating conditions, with values similar to R-134a
- C. Replace the refrigerant as a precaution
- D. Visually inspect for visible damage only

5. The proper R-1234yf high-side pressure specification at idle is approximately:

- A. Apply maximum pressure available
- B. Replace the refrigerant as a precaution
- C. Replace the gauges as a precaution
- D. Approximately 175-225 psi for typical operating conditions, with values similar to R-134a

6. The proper purpose of refrigerant identification before service is to:

- A. Apply compressed air to the system
- B. Replace the refrigerant as a precaution
- C. Verify the refrigerant type and detect any contamination from improper service
- D. Filter contaminants from the system

7. The proper specification for refrigerant identification result is:

- A. The identified refrigerant must be at least 98% pure (typical specification varies)
- B. Apply compressed air to the system
- C. Replace the refrigerant as a precaution
- D. Visually inspect for visible damage only

8. A vehicle's refrigerant identifier shows 75% R-134a and 25% other refrigerants. The MOST appropriate action is:

- A. Apply compressed air to the system
- B. Replace only the contaminated refrigerant
- C. Replace the system as a precaution
- D. Recover the contaminated refrigerant separately, dispose per regulations, address the contamination source, and recharge with proper refrigerant

9. The proper purpose of an electronic refrigerant leak detector is to:

- A. Apply compressed air to the system
- B. Detect refrigerant leaks through electronic sensing of refrigerant vapor
- C. Replace the detector as a precaution
- D. Filter contaminants from the system

10. The proper procedure for using an electronic leak detector is to:

- A. Apply compressed air to the detector
- B. Replace the detector as a precaution
- C. Use the detector calibrated for the specific refrigerant, follow the manufacturer's procedure, and identify any leaks
- D. Visually inspect for visible damage only

11. A vehicle's electronic leak detector indicates a leak at the condenser fitting. The MOST appropriate action is:

- A. Verify the leak through additional testing methods, identify the specific cause, repair the leak, evacuate, recharge, and verify resolution

- B. Apply compressed air to the fitting
- C. Replace the condenser as a precaution
- D. Replace the brake fluid as the only step

12. The proper purpose of refrigerant dye in leak detection is to:

- A. Apply compressed air to the system
- B. Replace the dye as a precaution
- C. Replace the refrigerant as a precaution
- D. Mark leak locations with fluorescent traces visible under UV light

13. The proper procedure for adding refrigerant dye to an A/C system is to:

- A. Apply compressed air to the system
- B. Add the manufacturer-specified amount of dye, operate the A/C system to circulate the dye, and use UV light for inspection
- C. Replace the refrigerant as a precaution
- D. Visually inspect for visible damage only

14. The proper purpose of a vacuum pump in A/C service is to:

- A. Apply compressed air to the system
- B. Replace the vacuum pump as a precaution
- C. Remove air and moisture from the A/C system before charging
- D. Filter contaminants from the system

15. The proper specification for vacuum depth during evacuation is:

- A. Approximately 500 microns or lower, ensuring proper moisture removal
- B. Apply maximum vacuum available
- C. Replace the vacuum pump as a precaution
- D. Visually inspect for visible damage only

16. The proper procedure for verifying vacuum pump performance is to:

- A. Apply compressed air to the pump
- B. Operate the pump, monitor the vacuum reading, verify the pump achieves and maintains the specified vacuum
- C. Replace the pump as a precaution
- D. Visually inspect for visible damage only

17. The proper purpose of a recovery/recycling/recharging (RRR) machine is to:

- A. Apply compressed air to the system
- B. Replace the machine as a precaution
- C. Replace the refrigerant as a precaution
- D. Combine refrigerant recovery, recycling, and recharging functions in a single EPA-compliant unit

18. The proper procedure for recovery refrigerant using an RRR machine is to:

- A. Apply compressed air to the system
- B. Replace the refrigerant as a precaution
- C. Connect the machine, follow the manufacturer's procedure, recover all refrigerant, and verify the recovered amount

D. Visually inspect for visible damage only

19. A vehicle's RRR machine shows the recovered refrigerant amount is below the manufacturer's specification (less than original charge). The MOST likely cause is:

A. A refrigerant leak in the system, indicating the system has lost some refrigerant before service

B. Apply compressed air to the system

C. Replace the refrigerant as a precaution

D. Visually inspect for visible damage only

20. The proper procedure for charging an A/C system using an RRR machine is to:

A. Apply compressed air to the system

B. Use the RRR machine to charge the manufacturer-specified amount by weight, monitor system performance, and verify proper operation

C. Replace the refrigerant as a precaution

D. Visually inspect for visible damage only

21. The proper specification for refrigerant charge accuracy is:

A. Apply maximum refrigerant available

B. Replace the refrigerant as a precaution

C. Replace the system as a precaution

D. The charge amount should be within the manufacturer's specification (typically ± 0.1 ounce or per spec)

22. The proper purpose of A/C scan tool diagnosis is to:

A. Apply compressed air to the system

- B. Replace the scan tool as a precaution
- C. Communicate with vehicle modules to retrieve A/C-related DTCs, monitor live data, and command components
- D. Filter contaminants from the system

23. A vehicle's A/C scan tool shows DTCs related to the variable displacement compressor. The MOST appropriate action is:

- A. Verify the customer concern, follow the manufacturer-specified diagnostic procedure for the specific DTC, and identify the cause
- B. Apply compressed air to the system
- C. Replace the compressor as a precaution
- D. Replace the brake fluid as the only step

24. The proper procedure for monitoring A/C system live data is to:

- A. Apply compressed air to the system
- B. Replace the scan tool as a precaution
- C. Replace the refrigerant as a precaution
- D. Use the scan tool to monitor sensor inputs, actuator commands, and system status during operation

25. The proper specification for A/C system performance verification is:

- A. Apply maximum cooling available
- B. Verify discharge air temperature, compare to manufacturer's specification, and verify system pressures within specification
- C. Replace the system as a precaution
- D. Visually inspect for visible damage only

26. The proper purpose of A/C system pressure-temperature relationship is to:

- A. Apply compressed air to the system
- B. Replace the refrigerant as a precaution
- C. Allow technicians to determine system condition by comparing measured pressures to the corresponding refrigerant temperatures
- D. Filter contaminants from the system

27. The proper purpose of PAG oil in R-134a systems is to:

- A. Lubricate the compressor and other moving parts in the refrigerant circulation
- B. Apply compressed air to the system
- C. Replace the oil as a precaution
- D. Filter contaminants from the system

28. The proper specification for PAG oil viscosity is:

- A. Apply maximum viscosity available
- B. Replace the oil as a precaution
- C. Replace the system as a precaution
- D. Match the manufacturer's specified viscosity (typically PAG 46, PAG 100, or PAG 150 depending on application)

29. The proper procedure for adding PAG oil to an A/C system is to:

- A. Apply compressed air to the system
- B. Add the manufacturer-specified oil type and amount based on the components replaced and per the service manual

- C. Replace the oil as a precaution
- D. Visually inspect for visible damage only

30. The proper purpose of POE oil in electric A/C compressor systems is to:

- A. Apply compressed air to the system
- B. Replace the oil as a precaution
- C. Provide proper lubrication while maintaining electrical isolation between the compressor and high-voltage components
- D. Filter contaminants from the system

31. The proper specification for POE oil compatibility is:

- A. Apply maximum oil available
- B. Replace the oil as a precaution
- C. Replace the system as a precaution
- D. POE oil is required for electric A/C compressors and is not interchangeable with PAG oil

32. The proper procedure for diagnosing A/C system contamination from oil mixing is to:

- A. Verify the customer concern, identify the contamination type, recover refrigerant, flush the system, replace contaminated components, and address the cause
- B. Apply compressed air to the system
- C. Replace the system as a precaution
- D. Replace the brake fluid as the only step

33. The proper purpose of a UV light in refrigerant leak detection is to:

- A. Apply compressed air to the system
- B. Illuminate refrigerant dye traces, making leak locations visible
- C. Replace the UV light as a precaution
- D. Filter contaminants from the system

34. The proper procedure for using UV light effectively is to:

- A. Apply compressed air to the system
- B. Replace the UV light as a precaution
- C. Inspect with the UV light at the specified distance, in proper lighting conditions, and look for fluorescent dye traces
- D. Visually inspect for visible damage only

35. The proper purpose of A/C system flushing is to:

- A. Apply compressed air to the system
- B. Replace the system as a precaution
- C. Replace the refrigerant as a precaution
- D. Remove debris, contaminated oil, and contaminants from the A/C system after compressor failure or contamination

36. The proper procedure for A/C system flushing is to:

- A. Use the manufacturer-specified flushing solvent and procedure, address all affected components, and verify the system is clean
- B. Apply compressed air to the system

- C. Replace the system as a precaution
- D. Replace the brake fluid as the only step

37. The proper specification for A/C condenser airflow is:

- A. Apply maximum airflow available
- B. The condenser must receive adequate airflow per the manufacturer's specification, supported by the cooling fan
- C. Replace the condenser as a precaution
- D. Visually inspect for visible damage only

38. The proper procedure for verifying condenser airflow is to:

- A. Apply compressed air to the condenser
- B. Replace the condenser as a precaution
- C. Verify the cooling fan operation, inspect condenser fins for damage or restriction, and verify proper airflow
- D. Replace the brake fluid as the only step

39. The proper specification for evaporator airflow is:

- A. Apply maximum airflow available
- B. The evaporator must receive adequate airflow from the blower motor, with the cabin air filter providing proper filtration
- C. Replace the evaporator as a precaution
- D. Visually inspect for visible damage only

40. The proper procedure for verifying evaporator airflow is to:

- A. Verify blower motor operation, inspect cabin air filter condition, verify air distribution to the evaporator, and verify proper airflow
- B. Apply compressed air to the evaporator
- C. Replace the evaporator as a precaution
- D. Visually inspect for visible damage only

41. The proper specification for engine cooling fan operation in A/C support is:

- A. Apply maximum fan speed available
- B. Replace the fan as a precaution
- C. Replace the cooling system as a precaution
- D. The cooling fan must operate at the proper speed per the manufacturer's specification when commanded by the system

42. The proper procedure for verifying cooling fan operation is to:

- A. Apply compressed air to the fan
- B. Verify proper fan operation at varied conditions, monitor commanded fan speed via scan tool, and verify proper operation
- C. Replace the fan as a precaution
- D. Visually inspect for visible damage only

43. The proper specification for cabin air filter is:

- A. Apply maximum filtration available
- B. Replace the filter as a precaution

- C. The filter must meet the manufacturer's specifications for filtration efficiency and replacement interval
- D. Visually inspect for visible damage only

44. The proper procedure for cabin air filter replacement is to:

- A. Inspect the filter condition, replace per the manufacturer's interval (typically 12,000-15,000 miles), and verify proper installation
- B. Apply compressed air to the filter
- C. Replace the filter as a precaution
- D. Visually inspect for visible damage only

45. The proper purpose of a heater control valve is to:

- A. Apply compressed air to the valve
- B. Replace the valve as a precaution
- C. Replace the cooling system as a precaution
- D. Control coolant flow to the heater core, regulating the heating output

46. The proper procedure for diagnosing heater control valve faults is to:

- A. Apply compressed air to the valve
- B. Verify proper valve operation, verify proper coolant flow when commanded, and verify proper heating response
- C. Replace the valve as a precaution
- D. Visually inspect for visible damage only

47. The proper specification for A/C system performance is:

- A. Apply maximum cooling available
- B. Replace the system as a precaution
- C. Replace the refrigerant as a precaution
- D. The system must produce discharge air at the manufacturer's specified temperature and provide adequate cooling per specification

48. The proper procedure for documenting A/C service findings is to:

- A. Apply compressed air to the components
- B. Replace the components as a precaution
- C. Inspect all relevant components, measure relevant specifications, record findings, identify required service, and provide recommendations to the customer
- D. Replace the brake fluid as the only step

49. A vehicle's A/C service record shows the system was last serviced 5 years ago. The current performance measures within specification but the system age and service history indicate aging. The MOST appropriate action is:

- A. Inform the customer that the system is operating within specification, document for the next service interval, and provide recommendations based on the customer's expected use
- B. Apply compressed air to the system
- C. Replace the A/C system as a precaution
- D. Replace the brake fluid as the only step

50. The proper procedure for recommending A/C service is to:

- A. Apply compressed air to the system
- B. Test the system, verify performance and condition, evaluate against the manufacturer's interval, and provide recommendations based on test results and service interval
- C. Replace the system as a precaution
- D. Replace the brake fluid as the only step

PRACTICE EXAM 5: A7 SIMULATION

— ANSWER KEY, EXPLANATIONS, AND TASK REMEDIATION

1. C — Approximately 30-45 psi for typical operating conditions. R-134a low-side pressure specifications vary with conditions but typically fall in this range at idle. Higher ambient temperatures increase the typical pressures. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
2. A — Approximately 200-250 psi for typical operating conditions. R-134a high-side pressure specifications vary with conditions but typically fall in this range at idle. Higher ambient temperatures increase the typical pressures. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
3. D — Connect manifold gauges to the proper service ports, run the A/C system, and observe the pressures at varied conditions. Pressure measurement requires proper gauge connection and operational testing. Each condition reveals different aspects of system performance. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
4. B — Approximately 25-40 psi for typical operating conditions, with values similar to R-134a. R-1234yf has similar pressure characteristics to R-134a. The slight differences require manufacturer-specific specifications. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
5. D — Approximately 175-225 psi for typical operating conditions, with values similar to R-134a. R-1234yf high-side pressures are similar to R-134a. Manufacturer-specific specifications apply. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
6. C — Verify the refrigerant type and detect any contamination from improper service. Refrigerant identification protects equipment and ensures proper service. Contamination from mixing damages recovery equipment. *ASE Task Reference: A7 Domain E — Refrigerant Recovery, Recycling, Handling, and Retrofit. Review subsection 7.5.*
7. A — The identified refrigerant must be at least 98% pure (typical specification varies). Refrigerant purity standards vary by jurisdiction and equipment. 98% is a common minimum for safe handling. *ASE Task Reference: A7 Domain E — Refrigerant Recovery, Recycling, Handling, and Retrofit. Review subsection 7.5.*

8. D — Recover the contaminated refrigerant separately, dispose per regulations, address the contamination source, and recharge with proper refrigerant. Significant contamination requires separate handling per regulations. The cause must be addressed to prevent recurrence. *ASE Task Reference: A7 Domain E — Refrigerant Recovery, Recycling, Handling, and Retrofit. Review subsection 7.5.*
9. B — Detect refrigerant leaks through electronic sensing of refrigerant vapor. Electronic detectors sense refrigerant escaping into the air. The detector must be calibrated for the specific refrigerant. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
10. C — Use the detector calibrated for the specific refrigerant, follow the manufacturer's procedure, and identify any leaks. Electronic leak detection requires proper calibration and procedure. Each refrigerant has different sensing characteristics. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
11. A — Verify the leak through additional testing methods, identify the specific cause, repair the leak, evacuate, recharge, and verify resolution. Leak verification through multiple methods reduces false positives. Comprehensive repair addresses the cause. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
12. D — Mark leak locations with fluorescent traces visible under UV light. Refrigerant dye creates visible leak markers. The dye stays at leak points after refrigerant escapes. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
13. B — Add the manufacturer-specified amount of dye, operate the A/C system to circulate the dye, and use UV light for inspection. Dye detection requires manufacturer-specified amounts and circulation. UV inspection reveals leak locations through dye traces. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
14. C — Remove air and moisture from the A/C system before charging. The vacuum pump prepares the system for proper refrigerant charging. Moisture causes acid formation and damage if not removed. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
15. A — Approximately 500 microns or lower, ensuring proper moisture removal. Deep vacuum removes moisture by lowering its boiling point. 500 microns is a common minimum specification. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
16. B — Operate the pump, monitor the vacuum reading, verify the pump achieves and maintains the specified vacuum. Vacuum pump verification requires operational testing and reading verification. The pump must achieve and hold the specified vacuum. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
17. D — Combine refrigerant recovery, recycling, and recharging functions in a single EPA-compliant unit. RRR machines are EPA-required for proper refrigerant service. They consolidate the

functions in a single regulated unit. *ASE Task Reference: A7 Domain E — Refrigerant Recovery, Recycling, Handling, and Retrofit. Review subsection 7.5.*

18. C — Connect the machine, follow the manufacturer's procedure, recover all refrigerant, and verify the recovered amount. RRR machine recovery requires proper procedure and verification. The recovered amount provides diagnostic information. *ASE Task Reference: A7 Domain E — Refrigerant Recovery, Recycling, Handling, and Retrofit. Review subsection 7.5.*
19. A — A refrigerant leak in the system, indicating the system has lost some refrigerant before service. Lower-than-spec recovery indicates leakage. The recovered amount reveals system charge condition. *ASE Task Reference: A7 Domain E — Refrigerant Recovery, Recycling, Handling, and Retrofit. Review subsection 7.5.*
20. B — Use the RRR machine to charge the manufacturer-specified amount by weight, monitor system performance, and verify proper operation. Charging by weight ensures proper refrigerant amount. Performance verification confirms proper operation. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
21. D — The charge amount should be within the manufacturer's specification (typically ± 0.1 ounce or per spec). Charge accuracy specifications vary by manufacturer. Tight tolerances ensure proper system operation. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
22. C — Communicate with vehicle modules to retrieve A/C-related DTCs, monitor live data, and command components. Scan tools provide the diagnostic interface to electronic A/C systems. Modern A/C systems require scan tool integration for proper diagnosis. *ASE Task Reference: A7 Domain D — Operating Systems and Related Controls. Review subsection 7.4.*
23. A — Verify the customer concern, follow the manufacturer-specified diagnostic procedure for the specific DTC, and identify the cause. Variable displacement DTC diagnosis requires manufacturer-specific procedure. Each DTC has specific diagnostic steps. *ASE Task Reference: A7 Domain D — Operating Systems and Related Controls. Review subsection 7.4.*
24. D — Use the scan tool to monitor sensor inputs, actuator commands, and system status during operation. Live data monitoring provides real-time diagnostic information. Each parameter reveals different aspects of operation. *ASE Task Reference: A7 Domain D — Operating Systems and Related Controls. Review subsection 7.4.*
25. B — Verify discharge air temperature, compare to manufacturer's specification, and verify system pressures within specification. Performance verification requires multiple measurements compared to specifications. Both temperature and pressures contribute to performance. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
26. C — Allow technicians to determine system condition by comparing measured pressures to the corresponding refrigerant temperatures. The pressure-temperature relationship is fundamental to

refrigeration diagnosis. Skilled technicians use this relationship for accurate diagnosis. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*

27. A — Lubricate the compressor and other moving parts in the refrigerant circulation. PAG oil is the primary lubricant for R-134a systems. The oil circulates with refrigerant for proper lubrication. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
28. D — Match the manufacturer's specified viscosity (typically PAG 46, PAG 100, or PAG 150 depending on application). PAG oil viscosity must match the application. Different vehicles use different viscosity grades for proper compressor lubrication. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
29. B — Add the manufacturer-specified oil type and amount based on the components replaced and per the service manual. PAG oil addition follows manufacturer specifications. Proper amount and type are critical for compressor longevity. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
30. C — Provide proper lubrication while maintaining electrical isolation between the compressor and high-voltage components. POE oil is required for electric compressors. Its electrical insulation properties prevent shock hazards. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
31. D — POE oil is required for electric A/C compressors and is not interchangeable with PAG oil. POE oil specifications protect the high-voltage system. Mixing POE and PAG can cause damage and safety issues. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
32. A — Verify the customer concern, identify the contamination type, recover refrigerant, flush the system, replace contaminated components, and address the cause. Oil mixing contamination requires comprehensive system service. Each step addresses different aspects of the repair. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
33. B — Illuminate refrigerant dye traces, making leak locations visible. UV light reveals the fluorescent dye marking leak points. Without UV light, the dye is not visible. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
34. C — Inspect with the UV light at the specified distance, in proper lighting conditions, and look for fluorescent dye traces. UV light usage requires proper distance and conditions. Improper conditions reduce dye visibility. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
35. D — Remove debris, contaminated oil, and contaminants from the A/C system after compressor failure or contamination. Flushing addresses contamination after major service events. Without

flushing, contaminants cause repeat failures. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*

36. A — Use the manufacturer-specified flushing solvent and procedure, address all affected components, and verify the system is clean. Flushing requires manufacturer-specified products and procedures. Each component must be addressed. *ASE Task Reference: A7 Domain B — Refrigeration System Component Diagnosis and Repair. Review subsection 7.2.*
37. B — The condenser must receive adequate airflow per the manufacturer's specification, supported by the cooling fan. Condenser airflow is critical for proper heat rejection. The cooling fan provides airflow at low vehicle speeds. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
38. C — Verify the cooling fan operation, inspect condenser fins for damage or restriction, and verify proper airflow. Condenser airflow verification requires operational and physical inspection. Each affects airflow performance. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
39. B — The evaporator must receive adequate airflow from the blower motor, with the cabin air filter providing proper filtration. Evaporator airflow comes from the blower system. The cabin filter provides filtration without restricting airflow. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
40. A — Verify blower motor operation, inspect cabin air filter condition, verify air distribution to the evaporator, and verify proper airflow. Evaporator airflow verification requires comprehensive approach. Each component contributes to airflow. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
41. D — The cooling fan must operate at the proper speed per the manufacturer's specification when commanded by the system. Cooling fan operation supports both engine cooling and A/C operation. Variable-speed fans require scan tool monitoring. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
42. B — Verify proper fan operation at varied conditions, monitor commanded fan speed via scan tool, and verify proper operation. Cooling fan diagnosis requires verification under varied conditions. Modern fans require scan tool monitoring. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
43. C — The filter must meet the manufacturer's specifications for filtration efficiency and replacement interval. Cabin air filter specifications support proper HVAC performance. The filter affects both filtration and airflow. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
44. A — Inspect the filter condition, replace per the manufacturer's interval (typically 12,000-15,000 miles), and verify proper installation. Cabin air filter replacement requires inspection, proper

interval, and verification. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*

45. D — Control coolant flow to the heater core, regulating the heating output. The heater control valve modulates coolant flow for heating control. It enables variable heating output. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
46. B — Verify proper valve operation, verify proper coolant flow when commanded, and verify proper heating response. Heater control valve diagnosis requires operational verification. Each step provides different diagnostic information. *ASE Task Reference: A7 Domain C — Heating, Ventilation, Engine Cooling, and A/C Air Distribution. Review subsection 7.3.*
47. D — The system must produce discharge air at the manufacturer's specified temperature and provide adequate cooling per specification. A/C performance specifications ensure proper customer satisfaction. Specifications guide diagnostic decision-making. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
48. C — Inspect all relevant components, measure relevant specifications, record findings, identify required service, and provide recommendations to the customer. A/C service documentation requires comprehensive recording and recommendations. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
49. A — Inform the customer that the system is operating within specification, document for the next service interval, and provide recommendations based on the customer's expected use. A/C system within specification past typical service interval supports proper service planning. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*
50. B — Test the system, verify performance and condition, evaluate against the manufacturer's interval, and provide recommendations based on test results and service interval. A/C service recommendations require comprehensive evaluation. *ASE Task Reference: A7 Domain A — A/C System Diagnosis and Repair. Review subsection 7.1.*