

TEST YOUR AUTOMOTIVE TECHNICAL KNOWLEDGE

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This self-test can help you determine how much you really know about this subject. Questions are written in the ASE style format and are multiple choice.

The answer key is on the last page.

There are also links to related articles on the <https://www.AA1Car.com> website. Good luck!

AUTOMOTIVE AIR CONDITIONING SELF-TEST

1. Technician A says some vehicles have VARIABLE DISPLACEMENT A/C compressors that operate continuously when the engine is running. Technician B says all A/C compressors use PISTONS to pump refrigerant through the A/C system.

Who is right?

- a. Technician A only
- b. Technician B only
- c. Both Technician A and B
- d. Neither Technician A nor B

2. All of the following statements about A/C CONDENSERS are TRUE EXCEPT:

- a. It is usually located in front of the radiator
- b. It receives high pressure refrigerant gas from the compressor
- c. It cools the air entering the passenger compartment
- d. It cools the refrigerant so the gas will condense into a liquid

3. The MAGNETIC CLUTCH on an A/C compressor:

- a. Traps magnetic particles that might damage the system
- b. Cycles on and off to drive the compressor as needed
- c. Cannot be replaced separately from the compressor
- d. Contains lubricant for the compressor

4. An ORIFICE TUBE does what in an A/C system?

- a. Regulates the flow of refrigerant into the evaporator
- b. Regulates the flow of refrigerant into the compressor
- c. Regulates the flow of refrigerant into the condenser
- d. Regulates the flow of coolant into the heater core

5. Technician A says the ACCUMULATOR should always be replaced if an A/C system has been opened up for repairs.

Technician B says a plugged ORIFICE TUBE is a common cause of compressor failure.

Who is right?

- a. Technician A only
- b. Technician B only
- c. Both Technician A and B
- d. Neither Technician A nor B

6. The ORIFICE TUBE is located where in an A/C system?
- At the compressor inlet
 - At the compressor outlet
 - At the condenser inlet
 - Between the condenser outlet and evaporator inlet
7. Which of the following is a possible reason for FLUSHING an A/C condenser?
- To replace the old refrigerant with new refrigerant
 - To remove sludge and debris
 - To remove moisture
 - To improve cooling efficiency
8. Technician A says most PARALLEL style A/C condensers cannot be flushed adequately because of their design, and should be replaced if the A/C system is contaminated. Technician B says most R-134a A/C compressors require PAG oil for lubrication. Who is right?
- Technician A only
 - Technician B only
 - Both Technician A and B
 - Neither Technician A nor B
9. A VARIABLE orifice tube does what?
- Improves low speed cooling
 - Improves high speed cooling
 - Has no effect on cooling performance
 - Filters out contaminants
10. Which of the following is NOT a common viscosity for R-134a PAG oils?
- 46
 - 100
 - 150
 - 200
11. Technician A says using the WRONG type of compressor oil in an A/C system may cause the compressor to fail. Technician B says putting too much compressor oil in an A/C system may LOWER cooling performance. Who is right?
- Technician A only
 - Technician B only
 - BOTH Technician A and B
 - Neither Technician A nor B
12. To minimize the risk of a repeat failure after replacing a compressor, which of the following should also be replaced at the same time?
- Suction hose filter
 - In-line filter
 - New accumulator or receiver/drier
 - All of the above

13. If compressor discharge pressures are unusually HIGH, it may indicate:
- Too much refrigerant in the system
 - Cross-contamination of refrigerants (Mixing R-134a with R-1234yf)
 - A blockage in the condenser
 - All of the above
14. LOWER than normal HIGH SIDE readings in an A/C system may be caused by any of the following, EXCEPT:
- A plugged condenser
 - A leaky compressor discharge valve
 - A restricted suction hose or compressor inlet
 - Low refrigerant
15. Which of the following can cause intermittent EVAPORATOR freeze-up?
- Too much refrigerant in the system
 - Wrong refrigerant in the system
 - Too much oil in the system
 - Air in the system
16. The EVAPORATOR is usually located where?
- In front of the radiator
 - Behind the radiator
 - Inside the passenger compartment
 - Outside the passenger compartment
17. If an A/C system is cooling poorly, any of the following could be the cause EXCEPT:
- Air in the system
 - A refrigerant leak
 - Insufficient compressor oil in the system
 - Low refrigerant
18. Where is the HIGH SIDE (high pressure) of an A/C system?
- Between the compressor outlet and condenser inlet
 - Between the compressor outlet and evaporator inlet
 - Between the evaporator inlet and compressor inlet
 - Between the evaporator outlet and compressor inlet
19. Where is the LOW SIDE (low pressure) of an A/C system?
- Between the compressor outlet and condenser inlet
 - Between the compressor outlet and evaporator inlet
 - Between the evaporator inlet and compressor inlet
 - Between the evaporator outlet and compressor inlet

20. Where is the refrigerant in a liquid state inside an A/C system?
- Between the compressor outlet and condenser inlet
 - Between the condenser outlet and evaporator inlet
 - Between the evaporator inlet and compressor inlet
 - Between the evaporator outlet and compressor inlet
21. Where is the refrigerant in a vapor state inside an A/C system
- Between the compressor outlet and condenser inlet
 - Between the condenser outlet and evaporator inlet
 - Between the evaporator outlet and compressor inlet
 - Everywhere in the system
22. The DESICCANT inside an A/C ACCUMULATOR does what?
- Absorbs moisture from the refrigerant
 - Filters out sludge
 - Stores excess compressor oil
 - All of the above
23. ANY of the following methods can be used to find a refrigerant leak EXCEPT:
- Using a Refrigerant identifier to check for leaks
 - Spraying Soapy Water on suspected leaks and watching for bubbles
 - Adding leak detection dye to the refrigerant
 - Using an Electronic Leak Detector to check hoses, connections and components
24. Technician A says EPA rules require R-134a refrigerant to be Recovered and Recycled if an A/C has to be opened to replace a leaky hose or defective component.
Technician B says VACUUM PURGING an A/C system prior to recharging it is required to remove air and moisture.
Who is right?
- Technician A only
 - Technician B only
 - BOTH Technician A and B
 - Neither Technician A nor B
25. Which type of refrigerant is the NEWEST to be used in late model vehicles?
- R-12
 - R-134a
 - R-12234yf
 - R-22

(Answer Key on Next Page)

ANSWER KEY

1A, 2C, 3B, 4A, 5C, 6D, 7B, 8C, 9A, 10D, 11C, 12D, 13D, 14A, 15A, 16C
17C, 18B, 19D, 20B, 21C, 22A, 23A, 24C, 25C



Air Conditioning Topics on Aa1Car.com:

[A/C Frequently Asked Questions](#)

[Air Conditioning Inspection Checklist](#)

[A/C Cooling Problem: Blows Warm Air Only No Cool Air](#)

[Troubleshooting Air Conditioning Problems](#)

[Troubleshoot Automatic Climate Control](#)

[Troubleshooting A/C Cooling Problems with Temperature](#)

[Cooling Fan \(electric\)](#)

[Cooling Fan Relay Problems](#)

[How To Recharge Your Car's Air Conditioner](#)

[Refrigerant Contamination](#)

[Flammable Refrigerants](#)

[R-1234yf](#)

[MACS Recommended A/C Service Procedures](#) (PDF file).

[A/C Compressor Failures](#)

[A/C Condenser Flushing](#)

[Compressor PAG Oil Application Chart](#)