TEST YOUR AUTOMOTIVE TECHNICAL KNOWLEDGE

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!

COOLING SYSTEM SELF-TEST

1. Technician A says most cars and light trucks today have "crossflow" radiators where the coolant flows from one side to the other.
Technician B says most late model SUVs have radiators made of soldered copper/brass.

Who is right?
a. Technician A only
b. Technician B only
c. Both Technician A and B
d. Neither one

2. All of the following statements are TRUE about Radiator Caps EXCEPT:
a. Caps relieve pressure to prevent freezing
b. Caps are spring-loaded to pressurize the cooling system
c. Pressurizing the cooling system raises the temperature at which coolant boils
d. A replacement radiator cap should have the same pressure rating as the original

3. Any of the following may cause an engine to overheat EXCEPT:
a. Loss of coolant due to a leak
b. Too much water in the coolant mixture (more than 50%)
c. Defective thermostat (stuck shut)
d. Faulty electric cooling fan, fan thermostat or fan relay

4. The recommended antifreeze/water mixture for most vehicles for year round driving is:
a. 70% antifreeze & 30% water
b. 60% antifreeze & 40% water
c. 50% antifreeze & 50% water
d. 40% antifreeze & 60% water

5. A thermostat does what?
a. Regulates the operating temperature of the engine
b. Affects the operation of the computerized engine control system
c. Reduces the time it takes the engine to warm up following a cold start
d. All of the above

6. Technician A says a leaky head gasket is a common cause of coolant loss and engine overheating.
Technician B says coolant in the oil or oil in the radiator is a sign of a leaky head gasket.
Who is right?
a. Technician A only
b. Technician B only
c. Both Technician A and B
d. Neither one

7. "Dex-Cool" antifreeze in General Motors vehicles is what color?
a. Green
b. Blue
c. Orange
d. Yellow

8. Technician A says mixing ordinary antifreeze with Dex-Cool does not reduce the service life of the coolant.
Technician B says the "Reserve Alkalinity" of the coolant indicates its ability to prevent freezing.
Who is right?
a. Technician A only
b. Technician B only
c. Both Technician A and B
d. Neither one

9. Compared to Ethylene Glycol (EG) antifreeze, Propylene Glycol (PG) antifreeze is:
a. Less toxic to animals and plants
b. More toxic to animals and plants
c. Same toxicity as EG antifreeze
d. More corrosion resistant than EG antifreeze

10. Technician A says most "long life" coolants have a recommended replacement interval of 5 years or 150,000 miles while that for ordinary coolant is 2 to 3 years or 30,000 miles.
Technician B says old worn out coolant can allow "Electrolysis Corrosion" inside the cooling system to occur.
Who is right?
a. Technician A only
b. Technician B only
c. Both Technician A and B
d. Neither one

11. Technician A says the water pump pulls coolant from the engine and pushes it to the radiator.
Technician B says the water pump in a "Reverse Flow" cooling system routes coolant to the cylinder heads first, and then the engine block.

Who is right?
a. Technician A only
b. Technician B only
c. Both Technician A and B
d. Neither one

12. Which of the following is TRUE about a radiator electric cooling fan?

a. The fan only runs when the engine is running
b. The fan will cycle on and off depending on the temperature of the coolant
c. The fan will turn off when the A/C is turned on because it isn't needed
d. The fan remains off when idling or stopped in traffic to reduce noise

13. All of the following statements are TRUE if an engine is overheating EXCEPT:

a. Do NOT open the radiator cap until the engine has cooled down
b. Stop driving the vehicle and turn the engine off ASAP so it can cool down
c. Add cold water into the radiator immediately to help cool the engine down
d. Turn the heater on HIGH to help lower the coolant temperature

14. Technician A recommends replacing radiator and other coolant hoses that are more than ten years old to reduce the risk of leaks.

Technician B says a loose, slipping or broken serpentine belt will cause an engine to overheat.

Who is right?
a. Technician A only
b. Technician B only
c. Both Technician A and B
d. Neither one

15. Which of the following is NOT true about cooling systems on Hybrid vehicles?

a. They all require a special non-electrically conductive type of antifreeze
b. The high voltage hybrid control electronics may have its own separate cooling circuit
c. Most of these vehicles have one or more auxiliary electric water pumps
d. Hybrid vehicles may require more frequent coolant changes and/or special service procedures.

16. When replacing a thermostat on an engine, the heat-sensing element on the thermostat should:

a. Be installed facing coolant flow from the radiator
b. Be installed facing coolant flow from the engine
c. Doesn't matter which way you install it
d. The thermostat's orientation may vary depending on the application

17. Any of the following could be a symptom of a leaky heater core EXCEPT:

a. Wet spots on the carpet or floor mat on the passenger side of the vehicle
b. Wet spots on the carpet or floor mat on the driver side of the vehicle
c. Loss of coolant from the cooling system
d. Fogging or misting inside the windshield when the defroster is turned on

(Answer Key on Next Page)

ANSWER KEY

1A, 2A, 3b, 4C, 5D, 6C, 7C, 8D, 9A, 10C, 11B, 12B, 13C, 14C, 15A, 16B, 17B

 Cooling System Problem Diagnosis & Repair Articles:

Finding & Fixing Coolant Leaks

Servicing Your Cooling System

Cooling System Maintenance & Repairs

Coolant Recovery Systems

Cooling System Electrolysis Corrosion (causes & cures)

Radiator Repair & Replacement

Your Temperature Warning Lamp Is On. What Should You Do?

Overheating: Causes & Cures

How To Diagnose & Replace A Thermostat

Coolant Sensors

Troubleshoot Electric Cooling Fan

Cooling Fan Relay Problems

Troubleshoot Cooling Fan Clutch

Water Pump Diagnosis & Replacement

Serpentine Belts

Coolant Checks & Changes More Complicated These Days

Coolant Types

Universal Coolant: One Antifreeze For All?

Coolant Recycling

Heater Service