Name:_____ Date:_____ Class_____

Time off_____

Time on_____

Total time_____

TASK Perform cooling system pressure and dye tests to identify leaks; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and heater core; determine necessary action.

MLR 1C1 | AST 1D1 | MAST 1D1

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1. **Research the following specifications for this vehicle in the appropriate service information.**
   a. **Radiator cap pressure rating: _____ psi/kPa**
   b. **Cooling system capacity: _____ qt/lt**
   c. **Type of coolant: _____**
   d. **Specified pH: _____**

2. Cooling System Pressure Test: If the vehicle is cold or cool, and the engine is not running, remove the radiator cap. Top off the radiator with the correct type of coolant/water mix if it is not already full. Install the proper adapter on the cooling system access point. Pressurize the cooling system to the specified radiator cap pressure listed above (or a maximum of 2 psi higher). Make sure you leave the system pressurized for a minimum of 10 minutes while you inspect for coolant leaks.

> NOTE Do not forget to check the heater core and the core plugs.

   a. **List any leaks found and any necessary action(s):**

3. Coolant Condition: Remove the pressure tester from the radiator. Fit the proper adapter on the tester so that you can check the radiator cap.
   a. **Pressure-test the cap and check it for the following information.**
      i. **At what pressure does it vent? _____ psi/kPa**
      ii. **At what pressure does it hold? _____ psi/kPa**
      iii. **Determine any necessary action(s):**

   b. **Use an anti-freeze hydrometer or refractometer to test the coolant's freezing and boiling points.**
      i. **Freezing point: _____ °F/°C**
      ii. **Boiling point: _____ °F/°C**

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c. Use a pH test strip or a pH tester to determine the pH balance of the anti-freeze.

i. pH reading: _____

ii. Determine any necessary action(s):

4. Radiator, Recovery Tank, and Hoses: Inspect the radiator, recovery tank, and hoses for damage or broken/missing pieces. List your findings and any necessary action(s):

5. Radiator Test: Reinstall the radiator cap on the radiator. Place the exhaust hose over the vehicle's exhaust pipe(s). Start the vehicle and allow the engine to warm up.

a. Use the infrared temperature gun to measure the temperature across the radiator core. The temperature should show a steady cooling reading as you trace the core tubes from the hot side of the radiator to the cool side. Any tubes that are significantly cooler than the others indicate a plugged tube in the radiator.

b. List your observations and determine any necessary action(s):

6. Have your supervisor/instructor verify satisfactory completion of this procedure, any observations found, and any necessary action(s) recommended.

Performance Rating

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0	**1**	**2**	**3**	**4**

Supervisor/instructor signature _____ Date _____