Electrical/Electronic Systems: Battery Diagnosis and Service

Student/intern information:

Name _____ Date _____ Class _____

Vehicle used for this activity:

Year _____ Make _____ Model _____

Odometer _____ VIN _____

Time off _____

Time on _____

Total time _____

Learning Objective/Task	CDX Tasksheet Number	2013 MLR NATEF Reference Number; Priority Level	2013 AST NATEF Reference Number; Priority Level	2013 MAST NATEF Reference Number; Priority Level
• Perform battery state-of-charge test; determine necessary action.	C302	6B1; P-1	6B1; P-1	6B1; P-1
• Confirm proper battery capacity for vehicle application; perform battery capacity test; determine necessary action.	C818	6B2; P-1	6B2; P-1	6B2; P-1
• Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting the vehicle battery.	C645	6B8; P-1	6B8; P-1	6B8; P-1
• Maintain or restore electronic memory functions.	C304	6B3; P-1	6B3; P-1	6B3; P-1
• Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.	C644	6B4; P-1	6B4; P-1	6B4; P-1
• Perform slow/fast battery charge according to manufacturer's instructions.	C819	6B5; P-1	6B5; P-1	6B5; P-1
• Jump-start vehicle using jumper cables and a booster battery or an auxiliary power supply.	C820	6B6; P-1	6B6; P-1	6B6; P-1
• Measure key-off battery drain (parasitic draw).	C954	6A8; P-1		
• Diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine necessary action.	C817		6A8; P-1	6A8; P-1
• Chesney Parasitic Load test	N/A	N/A	N/A	N/A

Materials Required

- Battery (assigned by your supervisor)
- Hydrometer and/or DVOM
- Protective gloves and apron
- Battery load tester
- Memory minder or jump box with 12V cigarette lighter adapter or DLC connector
- Baking soda and water or commercially available battery cleaner
- Battery terminal cleaner
- Battery brush
- Battery charger
- Auxiliary power supply/jump box or jumper cables

Some Safety Issues to Consider

- Be cautious around electricity. High voltage (enough to injure or kill you) is present on many vehicles. Ignition systems, hybrid vehicles, and 42-volt electrical systems are just a few hazards to be careful of.
- Accidental deployment of the airbag system could happen if you inadvertently probe the wrong wire. Most manufacturers use yellow-colored wiring to denote wiring for the airbag system. Always be aware of the system/circuit you are working on.
- Use extreme caution when working around batteries. Immediately remove any electrolyte that may come into contact with you. Electrolyte is a mixture of sulfuric acid and water. Please consult with the shop safety and emergency procedures when working with or around batteries.
- Batteries give off hydrogen gas during charging and discharging. Never use an open flame, torch, or grinder near a battery.
- Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

Performance Standard

0—No exposure: No information or practice provided during the program; complete training required

1—Exposure only: General information provided with no practice time; close supervision needed; additional training required

2—Limited practice: Has practiced job during training program; additional training required to develop skill

3—Moderately skilled: Has performed job independently during training program; limited additional training may be required

4—Skilled: Can perform job independently with no additional training