

2017 ASE Correlation Chart

Electrical/Electronic (A6)

MLR- Maintenance & Light Repair

AST- Auto Service Technology (Includes MLR)

MAST- Master Auto Service Technology (Includes MLR and AST)

	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
A. General: Electrical Systems Diagnosis							
1.	Research vehicle service information including vehicle service history, service precautions, and technical service bulletins.	P-1	✓	✓	✓	130-132	25-27; 153
2.	Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law).	P-1	✓	✓	✓	462-466	120-128
3.	Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow and resistance	P-1	✓	✓	✓	481-493	129
4.	Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.	P-1	✓	✓	✓	523-528	138; 139
5.	Demonstrate proper use of a test light on an electrical circuit.	P-1	(P-2)	✓	✓	479-480	130
6.	Use fused jumper wires to check operation of electrical circuits.	P-1	(P-2)	✓	✓	479	131

7.	Use wiring diagrams during the diagnosis (troubleshooting) of electrical/electronic circuit problems.	P-1			✓	515-523	137
8.	Diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine needed action.	P-1	✓	✓	✓	593-594	145
9.	Inspect and test fusible links, circuit breakers, and fuses; determine needed action.	P-1	✓	✓	✓	505-509	133
10.	Inspect, test, repair, and/or replace components, connectors, terminals, harnesses, and wiring in electrical/electronic systems (including solder repairs)	P-1		✓	✓	509-513	134; 136; 141
11.	Check electrical/electronic circuit waveforms; interpret readings and determine needed repairs.	P-2			✓	495-501	132
12.	Repair data bus wiring harness.	P-1			✓	510-512	135; 143
B. Battery Diagnosis and Service							
1.	Perform battery state-of-charge test; determine needed action.	P-1	✓	✓	✓	587-591	146
2.	Confirm proper battery capacity for vehicle application; perform battery capacity and load test; determine needed action.	P-1	✓	✓	✓	589-591	144; 146
3.	Maintain or restore electronic memory functions.	P-1	✓	✓	✓	594-595	147
4.	Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.	P-1	✓	✓	✓	586-587	148
5.	Perform slow/fast battery charge according to manufacturer's recommendations.	P-1	✓	✓	✓	591-592	149
6.	Jump-start vehicle using jumper cables and a booster battery or an auxiliary power supply.	P-1	✓	✓	✓	592-593	150

7.	Identify safety precautions for high voltage systems on hybrid electric, hybrid electric, and diesel vehicles.	P-2	✓	✓	✓	48-49; 1063; 1073-1082	282; 283
8.	Identify electrical/electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting vehicle battery.	P-1	✓	✓	✓	595	151
9.	Identify hybrid vehicle auxiliary (12v) battery service, repair, and test procedures.	P-3	✓	✓	✓	1053-1077	152
C. Starting System Diagnosis and Repair							
1.	Perform starter current draw tests; determine needed action.	P-1	✓	✓	✓	612-613	156
2.	Perform starter circuit voltage drop tests; determine needed action.	P-1	✓	✓	✓	610-611	156
3.	Inspect and test starter relays and solenoids; determine needed action.	P-2	✓	✓	✓	613	156
4.	Remove and install starter in a vehicle.	P-1	✓	✓	✓	613-615	158
5.	Inspect and test switches, connectors, and wires of starter control circuits; determine needed action.	P-2	✓	✓	✓	612-613	157
6.	Differentiate between electrical and engine mechanical problems that cause a slow-crank or a no-crank condition	P-2		✓	✓	612-613	156
7.	Demonstrate knowledge of an automatic idle-stop/start-stop system.	P-2	✓	✓	✓	606-608	155
D. Charging System Diagnosis and Repair							
1.	Perform charging system output test; determine needed action.	P-1	✓	✓	✓	638	164
2.	Diagnose (troubleshoot) charging system for causes of undercharge, no-charge, or overcharge conditions.	P-1		✓	✓	633-638	168

3.	Inspect, adjust, and/or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment	P-1	✓	✓	✓	634-635	166; 167
4.	Remove, inspect, and/or replace generator (alternator).	P-1	(P-2)	✓	✓	639-640; 643	167
5.	Perform charging circuit voltage drop tests; determine needed action.	P-1	✓	✓	✓	637-638	165
E. Lighting Systems Diagnosis and Repair							
1.	Diagnose (troubleshoot) the causes of brighter-than-normal, intermittent, dim, or no light operation; determine needed action.	P-1	✓	✓	✓	655; 664-666	169
2.	Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed.	P-1		✓	✓	651-662	169
3.	Aim headlights.	P-2	✓	✓	✓	662-663	171
4.	Identify system voltage and safety precautions associated with high-intensity discharge headlights	P-2	✓	✓	✓	659-660	170
F. Instrument Cluster and Driver Information Systems Diagnosis and Repair							
1.	Inspect and test gauges and gauge sending units for causes of abnormal readings; determine needed action.	P-2		✓	✓	676-677	172
2.	Diagnose (troubleshoot) the causes of incorrect operation of warning devices and other driver information systems; determine needed action.	P-2		✓	✓	669-670; 673-675	173
3.	Reset maintenance indicators as required.	P-2	✓	✓	✓	219-220	174

G. Repair Body Electrical Systems Diagnosis and Repair							
1.	Diagnose operation of comfort and convenience accessories and related circuits (such as: power window, power seats, pedal height, power locks, truck locks, remote start, moon roof, sun roof, sun shade, remote keyless entry, voice activation, steering wheel controls, back-up camera, park assist, cruise control, and auto dimming headlamps); determine needed repairs	P-2		✓	✓	695-706	180
2.	Diagnose operation of security/anti-theft systems and related circuits (such as: theft deterrent, door locks, remote keyless entry, remote start, and starter/fuel disable); determine needed repairs.	P-2		✓	✓	706; 708-714	181
3.	Diagnose operation of entertainment and related circuits (such as: radio, DVD, remote CD changer, navigation, amplifiers, speakers, antennas, and voice-activated accessories); determine needed repairs.	P-3		✓	✓	737-749	140; 186
4.	Diagnose operation of safety systems and related circuits (such as: horn, airbags, seat belt pretensioners, occupancy classification, wipers, washers, speed control/collision avoidance, heads-up display, park assist, and back-up camera); determine needed repairs	P-1		✓	✓	715-726	175; 176; 177; 182; 183; 184
5.	Diagnose body electronic systems circuits using a scan tool; check for module communication errors (data bus systems); determine needed action.	P-2		✓	✓	664; 676; 680; 690; 734	179

AT6- Halderman

6.	Describe the process for software transfer, software updates, or reprogramming of electronic modules	P-2		✓	✓	1039-1041	179
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