ELECTRICAL & ELECTRONIC SYSTEMS

ACS 24

Competency Ratings

Instructor's Name 3 SATISFACTORY PERFORMANCE

2 PASSING (WITH DEFICIENCIES)

Lab Tech. 1 UNSATISFACTORY

Fall 2009 BLANK – MATERIAL NOT COVERED in Class / Performed during internship

Column 1 Reppresents the student competencies being assesed by the corresponding tasks	Corresponding student	4 : • • • •							
I. General Electrical System Diagnosis									
Identify and interpret electrical/electronic system concern; determine necessary action. P-1	B D F								
Rsearch applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions, and technical service	FA								
3. Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, and calibration	G F								

decals). P-1									
4. Diagnose electrical/electronic integrity for									
series, parallel and series-parallel circuits	ВЕ								
using principles of electricity (Ohm's									
Law). P-1									
5. Use wiring diagrams during diagnosis of	ВС								
electrical circuit problems. P-1	DF								
6. Demonstrate the proper use of a digital									
multimeter (DMM) during diagnosis of	D G								
electrical circuit problems. P-1									
7. Check electrical circuits with a test light;	D C								
determine necessary action. P-2									
8. Measure source voltage and perform voltage									
drop tests in electrical/electronic circuits	CDG								
using a voltmeter; determine necessary									
action. P-1									
9. Measure current flow in electrical/electronic									
circuits and components using an ammeter;									
	DCG								
determine necessary action. P-1									
10 electrical/electronic circuits and components									
using an ohmmeter; determine necessary	DCG								
action. P-1									
11. Check electrical circuits using fused jumper	D G								
wires; determine necessary action. P-2	DО								
12. Locate shorts, grounds, opens and resistance									
problems in electrical/electronic circuits;	D G								
determine necessary action. P-1									
13. Measure and diagnose the cause(s) of	D G								
excessive key-off battery drain (parasitic									
14. Inspect and test fusible links, circuit									

breakers, and fuses; determine necessary	D G								
action. P-1									
15. Inspect and test switches, connectors, relays,									
solid state devices, and wires of electrical/	CDG								
electronic circuits; perform necessary									
action. P-1									
16. Repair wiring harnesses and connectors. P-1	G								
17. Perform solder repair of electrical	G								
wiring. P-1									
II. Battery Diagnosis and Service									
1. Perform battery state-of-charge test;	ВС								
determine necessary action. P-1									
2. Perform battery capacity test; confirm									
proper battery capacity for vehicle	CDF								
application; determine necessary action. P-1									
3. Maintain or restore electronic memory	CDF								
functions. P-1									
4. Inspect, clean, fill, and replace battery. P-2	G								
5. Perform slow/fast battery charge. P-2	G								
6. Inspect and clean battery cables, connectors,									
clamps, and hold-downs; repair or replace as									
ciampo, and note downs, repair of replace as	D								
needed. P-1									
7. Start a vehicle using jumper cables and a	С								
battery or auxiliary power supply. P-1									
III. Starting System Diagnosis and									
Repair									
1. Perform starter current draw tests;									
determine necessary action. P-1	C G								
2. Perform starter circuit voltage drop tests;	CG								
determine necessary action. P-1									

3. Inspect and test starter relays and solenoids;	CG								
determine necessary action. P-2									
4. Remove and install starter in a vehicle. P-1	A C G								
5. Inspect and test switches, connectors, and wires of starter control circuits; perform necessary action. P-2	D								
6. Differentiate between electrical and engine mechanical problems that cause a slow- crank or no-crank condition. P-2	B D G A								
IV. Charging System Diagnosis and Repair									
Perform charging system output test; determine necessary action. P-1	CDG								
Diagnose charging system for the cause of undercharge, no-charge, and overcharge conditions. P-1	CDG								
3. Inspect, adjust, or replace generator (alternator) drive belts, pulleys, and tensioners; check pulley and belt alignment. P-2	DG								
4. Remove, inspect, and install generator (alternator). P-1	AGC								
Perform charging circuit voltage drop tests; determine necessary action. P-1	DGC								
V. Lighting Systems Diagnosis and Repair									
Diagnose the cause of brighter than normal, intermittent, dim, or no light operation; determine necessary action. P-1	CDG								
2. Inspect, replace, and aim headlights and bulbs. P-2	CDG								

Inspect and diagnose incorrect turn signal or hazard light operation; perform necessary action. P-2	D G								
VI. Gauges, Warnings Devices, and Driver Information Systems Diagnosis and Repair									
Inspect and test gauges and gauge sending units for cause of intermittent, high, low, or no gauge readings; determine necessary action. P-1	C D G								
Inspect and test connectors, wires, and printed circuit boards of gauge circuits; determine necessary action. P-3	CDG								
Diagnose the cause of incorrect operation of warning devices and other driver information systems; determine necessary action. P-1	DG								
Inspect and test sensors, connectors, and wires of electronic instrument circuits; determine necessary action. P-2	DFG								
VII. Horn and Wiper/Washer Diagnosis and Repair									
Diagnose incorrect horn operation; perform necessary action. P-2	DGF								
Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action. P-2	DGF								
Diagnose incorrect washer operation; perform necessary action. P-2	DGF								
VIII. Accessories Diagnosis and Repair									
1. Diagnose incorrect operation of motor-									

driven accessory circuits; determine	DBF								
necessary action. P-2									
2. Diagnose incorrect heated glass operation;	DFG								
determine necessary action. P-3									
3. Diagnose incorrect electric lock operation;	DFG								
determine necessary action. P-2									
4. Diagnose incorrect operation of cruise									
control systems; determine necessary	DFG								
action. P-3									
5. Diagnose supplemental restraint system									
(SRS) concerns; determine necessary action.									
(Note: Follow manufacturer's safety	DFG								
procedures to prevent accidental									
deployment). P-2									
6. Disarm and enable the airbag system for	DFG								
vehicle service. P-1									
7. Diagnose radio static and weak, intermittent,									
or no radio reception; determine necessary									
	DFG								
action. P-3									
8. Remove and reinstall door panel. P-1	G								
9. Diagnose body electric system circuits using	DFG								
a scan tool; determine necessary action. P-2	DrG								
a scan toor, determine necessary action. 1-2									
10. Check for module communication errors	D B								
using a scan tool. P-3									
11. Diagnose the cause of false, intermittent, or	BFG								
no operation of anti-theft system. P-2	D F G								