



2020-2021

Technical Skills Assessment

Heavy Equipment/Diesel Technology

Results by Standard

Legend (%)		
0-50%	51-75%	76-100%

Assessment: Heavy Equipment/Diesel Technology	% Correct	% Correct	% Correct
Number tested: 66	17-18	18-19	20-21
CONTENT STANDARD 1.0: SAFETY AND TOOLS	82.24%	81.07%	80.37%
Performance Standard 1.1: Demonstrate General Lab Safety Rules and Procedures	84.50%	84.91%	83.44%
1.1.1 Perform a quality job hazard analysis	58.14%	69.81%	76.12%
1.1.2 Demonstrate the key attributes to contribute to an active safety culture	79.07%	77.99%	76.12%
1.1.3 Utilize proper ventilation procedures for working within the lab/shop area	83.72%	88.68%	92.54%
1.1.5 Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other fire safety equipment	88.37%	82.08%	77.61%
1.1.6 Identify the location and use of eye wash stations	81.40%	86.79%	88.81%
1.1.7 Identify the location of the posted evacuation routes	88.37%	88.05%	82.09%
1.1.8 Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities (i.e., personal protection equipment - PPE)	96.12%	95.60%	98.51%
1.1.9 Identify and wear appropriate clothing for lab/shop activities	95.35%	98.11%	96.27%
1.1.10 Secure hair and jewelry for lab/shop activities	97.67%	97.17%	97.76%
1.1.12 Perform housekeeping duties	58.14%	55.66%	46.27%
Performance Standard 1.2: Demonstrate Safe Handling and Usage of Tools	78.29%	74.37%	75.00%
1.2.1 Identify appropriate tools and their usage in diesel service applications	41.86%	32.08%	40.30%
1.2.2 Identify standard and metric designation	54.65%	43.40%	45.52%
1.2.3 Demonstrate safe handling and use of hand and power tools	82.56%	80.19%	77.61%
1.2.4 Utilize safe procedures for handling of tools and equipment	96.51%	96.23%	97.01%
1.2.5 Identify and use proper placement of floor jacks and jack stands	88.37%	86.79%	90.05%
1.2.6 Identify situational tool restrictions	82.56%	80.19%	74.63%
CONTENT STANDARD 2.0: BASIC VEHICLE SERVICE AT A DOT LEVEL	58.72%	61.79%	61.94%
Performance Standard 2.1: Identify and Utilize Vehicle Service Information	65.12%	73.58%	80.60%
2.1.3 Demonstrate knowledge of special service messages, quotes, service campaigns/recalls, vehicle/service warranty applications, and service interval recommendations	65.12%	73.58%	80.60%

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Performance Standards 2.2: Prepare A Vehicle For Service	56.59%	57.86%	55.72%
2.2.4 Demonstrate use of the three Cs (concern, cause, and correction)	56.59%	57.86%	55.72%
CONTENT STANDARD 3.0: DIESEL ENGINE SERVICE	68.52%	64.88%	67.74%
Performance Standard 3.1: Perform Preliminary Engine Inspection	65.70%	62.74%	64.93%
3.1.2 Identify engine fuel, oil, coolant, air, and other leaks; determine needed action	65.70%	62.74%	64.93%
Performance Standard 3.3: Understand and Diesel Engine Theory and Operation	69.77%	65.83%	68.99%
3.3.1 Describe the operation of a diesel engine	70.70%	66.79%	70.45%
3.3.2 Describe the operations of a diesel engines subsystems	68.60%	64.62%	67.16%
CONTENT STANDARD 4.0: PREVENTATIVE MAINTENANCE INSPECTIONS	86.05%	84.91%	86.57%
Performance Standard: 4.1: Perform Presentative Maintenance Inspections	86.05%	84.91%	86.57%
4.1.1 Perform a Form A Preventative Maintenance Inspection per Technology & Maintenance Council standards	86.05%	84.91%	86.57%
CONTENT STANDARD 6.0 : BRAKE SYSTEM	57.93%	55.92%	57.26%
Performance Standard 6.1: Understand Brake Theory and Operation	52.16%	55.26%	56.93%
6.1.1 Identify brake safety procedures per system manufacturer and type	37.98%	38.36%	47.76%
6.1.2 Identify brake components for air or hydraulic brake systems	76.74%	82.08%	75.37%
6.1.4 Identify wear limits in brake linings, drums and rotators	48.84%	53.77%	52.24%
Performance Standards 6.2: Assess Air Brakes - Mechanical/Foundation Brakes	74.42%	81.13%	80.60%
6.2.1 Inspect and measure brake shoes or pads; replace friction lining	74.42%	81.13%	80.60%
Performance Standard 6.3: Perform Wheel Bearing Service and Repair	65.89%	49.06%	50.25%
6.3.1 Inspect and service wheel bearings according to manufacturers specifications	65.89%	49.06%	50.25%
CONTENT STANDARD 7.0: ELECTRIC/ELECTRONIC SYSTEMS	60.79%	59.38%	59.66%
Performance Standard 7.1: Understand General Electrical Systems	54.52%	52.52%	54.23%
7.1.1 Identify safety procedures related to electrical system service	48.84%	40.57%	44.78%
7.1.4 Read and interpret electrical/electronic circuits using wiring diagrams	74.42%	81.13%	56.72%
7.1.5 Check continuity in electrical/electronic circuits using appropriate test equipment	36.43%	40.25%	47.76%
7.1.6 Check applied voltages, circuit voltages, and voltage drops in electrical/electronic circuits using appropriate test equipment	58.91%	49.06%	50.25%
7.1.7 Check current flow in electrical/electronic circuits and components using appropriate test equipment	72.09%	50.94%	53.73%
7.1.8 Check resistance in electrical/electronic circuits and components using appropriate test equipment	41.09%	43.40%	50.25%
7.1.9 Locate shorts, grounds, and opens in electrical/electronic circuits	67.44%	72.64%	67.91%
7.1.10 Inspect and test fusible links, circuit breakers, relays, solenoids, and fuses; replace as needed	64.34%	62.89%	65.17%
Performance Standard 7.2: Perform Battery Service	64.34%	65.16%	63.38%

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Number tested: 66			
7.2.1 Identify battery type; perform appropriate battery load test; determine needed action	61.63%	66.04%	61.94%
7.2.2 Determine battery state of charge using an open circuit voltage test	52.33%	44.34%	44.78%
7.2.3 Inspect, clean, and service battery; replace as needed	70.54%	67.92%	69.65%
7.2.5 Charge battery using appropriate method for battery type	75.19%	76.10%	74.13%
7.2.6 Inspect, test, and clean battery cables and connectors; repair or replace as needed	41.86%	48.11%	45.52%
7.2.7 Jump start a vehicle using jumper cables and a booster battery or appropriate auxiliary power supply using proper safety procedures	72.09%	76.10%	71.64%
Perform Standard 7.3: Perform Starting System Service	62.79%	58.49%	59.70%
7.3.5 Perform starter current draw test; determine needed action	62.79%	58.49%	59.70%
Performance Standard 7.4: Perform Charging System Diagnosis and Repair	79.07%	69.81%	77.61%
7.4.6 Remove and replace alternator	79.07%	69.81%	77.61%
Performance Standard 7.5: Perform Lighting Systems Diagnosis Repair	100.00%	86.79%	83.58%
7.5.2 Test, replace, and aim headlights	100.00%	86.79%	83.58%
CONTENT STANDARD 8.0: TRANSPORTATION CAREERS	93.02%	100.00%	94.03%
Performance Standard 8.2: Explore Industry Ethics and Standards	93.02%	100.00%	94.03%
8.2.4 Demonstrate personal accountability and responsibility for your career and safety	93.02%	100.00%	94.03%