

Job Ready Assessment Blueprint

Automotive Technician-Core



Test Code: 4309 / Version: 01

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## General Assessment Information

### Blueprint Contents

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**Test Type:** The Automotive Technician-Core industry-based credential is included in NOCTI's Job Ready assessment battery. Job Ready assessments measure technical skills at the occupational level and include items which gauge factual and theoretical knowledge. Job Ready assessments typically offer both a written and performance component and can be used at the secondary and post-secondary levels. Job Ready assessments can be delivered in an online or paper/pencil format.

**Revision Team:** The assessment content is based on input from secondary, post-secondary, and business/industry representatives from the states of Illinois, Kentucky, Maine, New Jersey, North Carolina, and Pennsylvania.



47.0604- Automobile/  
Automotive Mechanics  
Technology/Technician



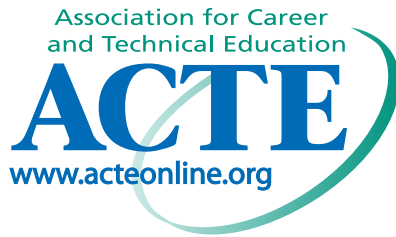
Career Cluster 16-  
Transportation, Distribution,  
and Logistics



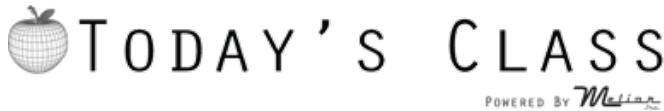
49-3023.01- Automotive  
Master Mechanics

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## General Assessment Information (continued)



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!



Today's Class delivers web-based interactive educational programs and has determined that there is significant alignment between their Automotive curriculum and NOCTI's Automotive Technician-Core technical skill assessment. The alignment suggests that use of the Today's Class program curriculum may enhance student scores on NOCTI's assessment.



The Automotive Lift Institute (ALI) applauds students who successfully complete a Career and Technical Education program and validate their knowledge and skills with credentials such as ALI's lift safety certificate course and NOCTI industry-based assessments. As the world's most-widely recognized source for promoting the safe design, construction, installation, inspection, and use of automotive lift products, ALI believes in the importance of third-party, industry-driven credentials and their importance as a foundation for defining a technician's skill level throughout their career.



In the lower division baccalaureate/associate degree category, 1 semester hour in Automotive Trades or Automotive Technician

## Written Assessment

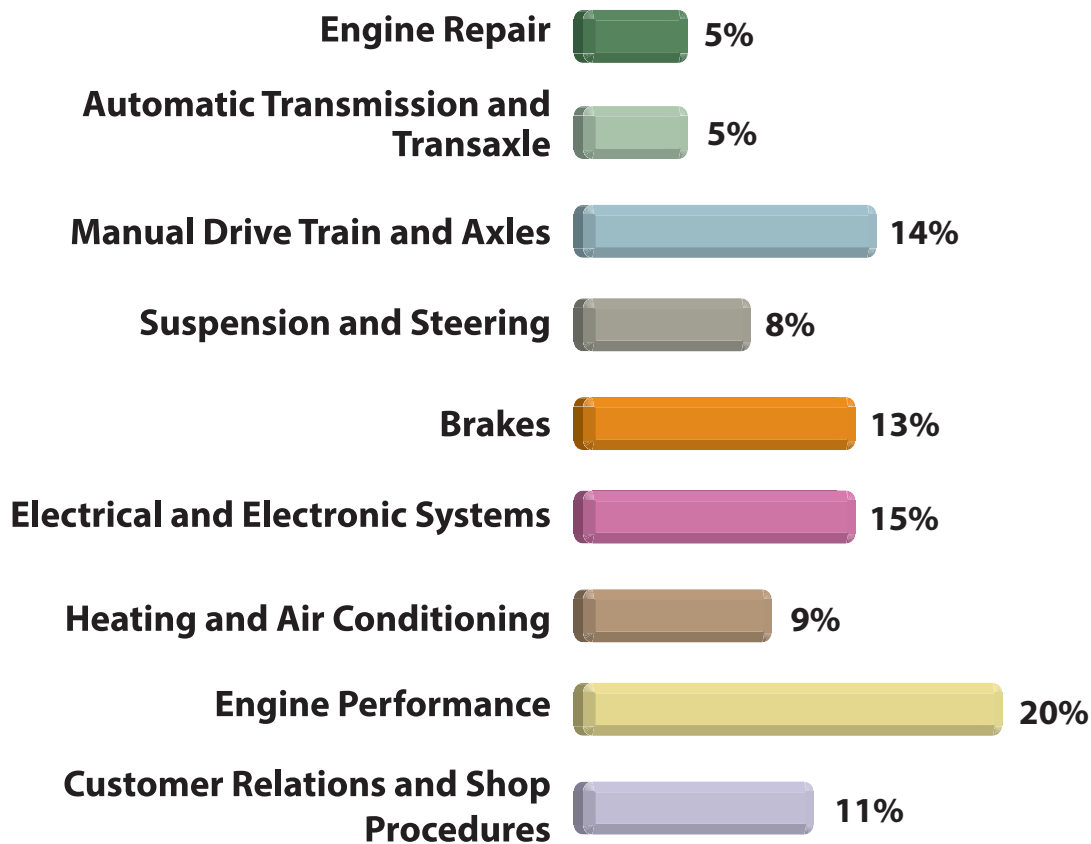
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 172

**Number of Sessions:** This assessment may be administered in one, two, or three sessions.

### Areas Covered



## Specific Standards and Competencies Included in this Assessment

### Engine Repair

- Inspect and service general engine issues, including adjusting valve trains
- Inspect, test, and service lubrication and cooling systems

### Automatic Transmission and Transaxle

- Check fluids on transmission/transaxle
- Perform in-vehicle transmission/transaxle inspections and service
- Describe and identify operational characteristics of transmission/transaxle for CVT and hybrids

### Manual Drive Train and Axles

- Check fluid condition and service transmissions and transaxles
- Perform clutch master cylinder inspections and service
- Identify, describe, inspect, and service manual transmission and transaxle issues
- Inspect and service drive shaft, half shafts, universal, and constant-velocity (CV) joints
- Inspect and service differential case assembly
- Inspect and service four wheel drive and all wheel drive systems



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## Specific Standards and Competencies (continued)

### Suspension and Steering

- Perform related suspension and steering systems inspection and service
- Perform vehicle pre-alignment inspection and ride-height
- Inspect and service wheels and tires

### Brakes

- Inspect and service hydraulic system
- Inspect and service drum brakes
- Inspect and service disc brakes
- Inspect and service power-assist units
- Inspect and service miscellaneous systems (e.g., wheel bearings, parking brakes, electrical)
- Identify and describe electronic brakes, traction, and stability control systems



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## Specific Standards and Competencies (continued)

### Electrical and Electronic Systems

- Inspect and service general electrical/electronic systems
- Inspect and service batteries
- Inspect and service starting systems
- Inspect and service charging systems
- Inspect and service lighting systems
- Inspect and service accessories

### Heating and Air Conditioning

- Inspect and service refrigeration system components
- Inspect and service heating, ventilation, and engine cooling systems
- Inspect and service operating systems and related controls

### Engine Performance

- Inspect and service general engine performance
- Identify and describe computerized controls
- Inspect and service fuel, air induction, and exhaust systems
- Inspect and service emissions control systems

### Customer Relations and Shop Procedures

- Interpret and estimate repair and work orders
- Utilize computerized and written vehicle service information
- Exhibit understanding of appropriate customer interactions
- Exhibit understanding of automotive, environmental, and hazardous materials
- Display understanding of safe work environment and shop procedures
- Identify proper tool handling and maintenance procedures

## Sample Questions

**Coolant in the engine oil would most likely indicate a**

- A. leaking water pump
- B. cracked engine block
- C. leaking head gasket
- D. leaking oil cooler

**When installing a new transmission rear seal,**

- A. the inner and outer lips should be installed dry
- B. the inner lip should be lubed with the fluid it is sealing
- C. the inner lip should be coated with RTV
- D. lapping compound should be used for a quicker seal

**A typical rear axle lube would be**

- A. 10W-30
- B. Dexron III®
- C. GL5 85W-90
- D. Mercon®

**Servicing the fluid on a rear differential without a drain plug may require**

- A. axle shaft removal
- B. driveshaft removal
- C. a suction gun
- D. a grease gun

**The technician bleeds the power steering system by**

- A. opening a bleeder valve
- B. removing the pressure line
- C. removing the return line
- D. turning the steering wheel

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### Sample Questions (continued)

**Proper dynamic tire balancing can help to alleviate**

- A. torque steer reaction
- B. high speed steering wheel shimmy
- C. front end pull
- D. low speed steering wheel shimmy

**Seal materials used for high temperature applications are usually made from**

- A. leather
- B. rubber
- C. nitrile
- D. silicone

**When replacing a wiper blade, what should the technician do?**

- A. Leave the wiper arm up and unattended.
- B. Change the blade when the arm is in the parked position.
- C. Place a fender cover under the raised arm when the blade is being installed.
- D. Replace the worn one and make sure the new one is on the driver's side.

**When checking for a no or low heat condition in a car, the technician should**

- A. verify the coolant temperature
- B. replace the heater core
- C. replace the thermostat
- D. verify the refrigerant charge

**The emission control system that admits air into the exhaust system is known as a/an**

- A. PCV system
- B. clean air package
- C. air injection system
- D. EGR valve

## Performance Assessment

NOCTI performance assessments allow individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

**Administration Time:** 1 hours and 50 minutes

**Number of Jobs:** 4

### Areas Covered:

#### **35% Brakes: Disc Brake Assembly Service**

Participant will follow procedures to remove caliper mounting bolts and replace brake pads. Steps will require the participants to remount and torque caliper, measure and record required specifications and adhere strictly to all safety procedures.

#### **32% Electrical/Electronic Systems: Test and Diagnose Battery, Starting, and Charging System**

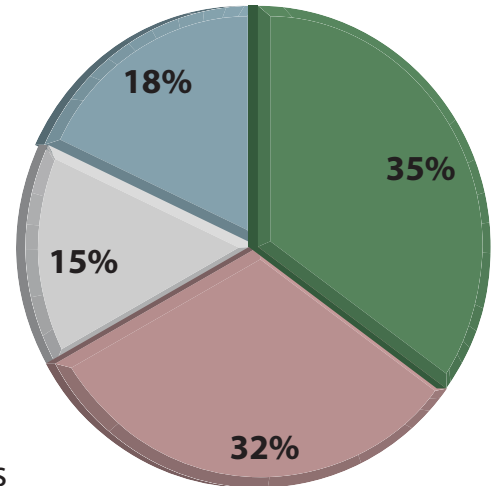
Participant will perform an open circuit voltage test, battery capacity test, starter draw test, ground circuit voltage drop test, and alternator output test. Steps will require the participant to look up and record specifications throughout the diagnosis.

#### **15% Engine Performance: Test Electronic Engine Control Component**

Participant will retrieve and document numerical trouble codes using service information to identify the trouble code(s) set. Participant will locate components on a vehicle that relate to the trouble codes identified.

#### **18% Suspension and Steering: Tire Service and Balance**

Participant will demonstrate the ability to dismount a tire from a wheel and mount a replacement tire on the wheel. Steps will include inflating the tire to 90% maximum inflation, balancing the tire and wheel assembly, and following safety standards.



## Sample Job

### Suspension and Steering: Tire Service and Balance

**Maximum Time:** 15 minutes

**Participant Activity:** The participant will dismount the tire from the wheel, mount replacement tire on wheel, inflate to 28 psi, balance tire and wheel assembly, and notify evaluator for inspection.

