



Agriculture Mechanics

General Assessment Information

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Test Type: The Agriculture Mechanics assessment is included in NOCTI's Teacher assessment battery. Teacher assessments measure an individual's technical knowledge and skills in a proctored proficiency examination format. These assessments are used in a large number of states as part of the teacher licensing and/or certification process, assessing competency in all aspects of a particular industry. NOCTI Teacher tests typically offer both a written and performance component that must be administered at a NOCTI-approved Area Test Center. Teacher assessments can be delivered in an online or paper/pencil format.

Revision Team: The assessment content is based on input from subject matter experts representing the following states: Georgia, Kansas, Minnesota, Missouri, Oklahoma, Pennsylvania, and West Virginia.



01.0201 - Agriculture Mechanization,
General



Career Cluster
Agriculture, Food, and Natural Resources



49-3041.00 - Farm Equipment Mechanics
and Service Technicians

Written Assessment

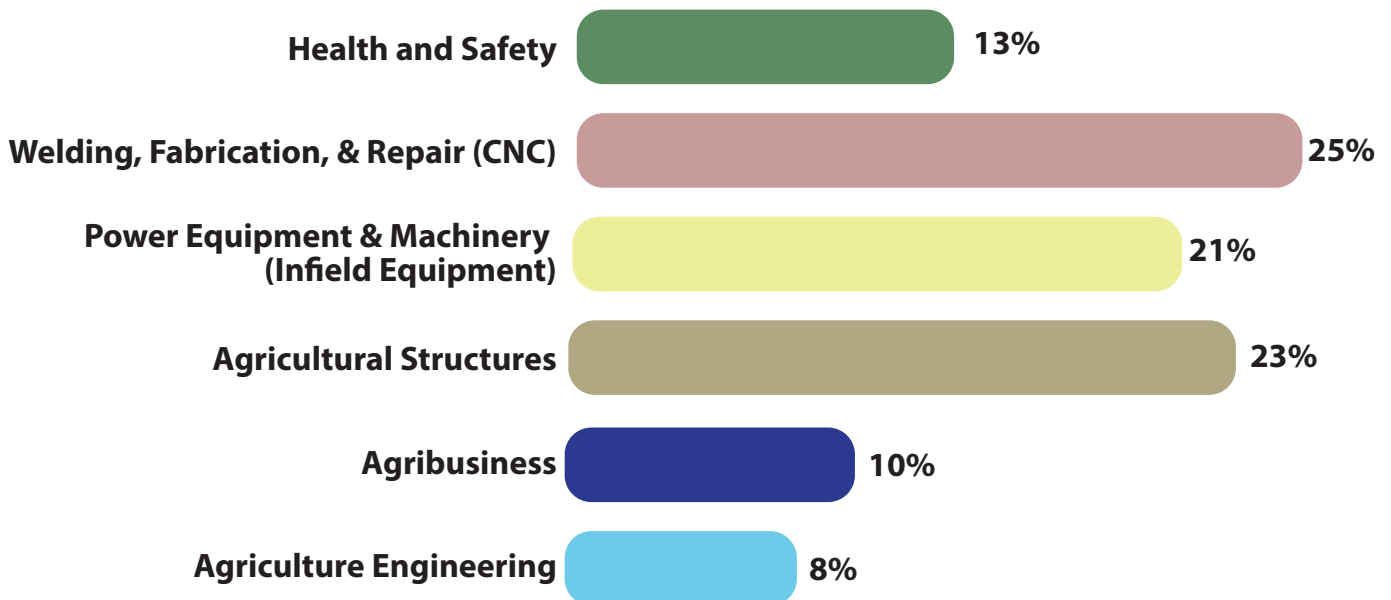
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

Administration Time: 2 hours and 30 minutes

Number of Questions: 120

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

Areas Covered



Specific Standards and Competencies Included in this Assessment

Health and Safety

- Identify and explain basic first aid
- Define and identify appropriate PPE and proper work attire
- Define and identify regulatory standards
- Describe and identify electrical, hydraulic, and mechanical systems safety

Welding, Fabrication, and Repair (CNC)

- Demonstrate knowledge of safety in welding, fabrication, and repair
- Explain measurement and measurement techniques
- Identify welding shop materials and requirements
- Identify and compare types of welding processes
- Identify and compare cutting and machining techniques

Power Equipment and Machinery (Infield Equipment)

- Demonstrate knowledge of equipment operation and operational safety
- Explain maintenance requirements and techniques
- Demonstrate the understanding of sensors and basic control systems
- Identify and compare engines and motors
- Demonstrate knowledge and usage of manuals and schematics
- Identify and explain power trains

Agricultural Structures

- Identify and list types of buildings
- Identify electrical and control systems
- Demonstrate knowledge of building layout/surveying/blueprints
- Identify and describe usage of tools and equipment
- Identify and explain plumbing and irrigation
- Demonstrate knowledge of framing and framing techniques
- Identify and describe environmental and natural resource systems

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Specific Standards and Competencies (continued)

Agribusiness

- Demonstrate knowledge of business and farm operations
- Demonstrate knowledge of record keeping
- Demonstrate knowledge of general economics, business, and loan options
- Demonstrate understanding of customer, client, and labor relations

Agriculture Engineering

- Define types of satellite-based technology
- Define types of computer-based (shop and manufacturing) technology/systems
- Define types of software-based (office and field) technology/systems

Sample Questions

It is important to only move someone with a suspected _____ injury if there are imminent danger concerns.

- A. head
- B. spinal
- C. leg
- D. arm

The center of wall stud is indicated with a _____ at 16 inches on a measuring tape.

- A. red dot
- B. red square
- C. black diamond
- D. black arrow

Three points of contact are recommended when climbing in and out of machinery to avoid

- A. falling
- B. tripping
- C. slipping
- D. stumbling

A circuit is a completed _____ through which electricity flows.

- A. path
- B. trail
- C. loop
- D. lane

A tract of land measuring 43,560 square feet is considered a/an

- A. hectare
- B. acre
- C. furlong
- D. mile

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: 3 hours

Number of Jobs: 6

Areas Covered:

22% Horizontal Square Groove Butt Weld - SMAW

Participants will safely execute a horizontal square groove butt weld by selecting electrodes, attaching the ground clamp, setting the correct amperage, gap, and tack, and positioning the metal correctly with a quality bead.

19% Oxyacetylene Cutting

Participants will safely adjust regulators, light, and cut using an oxyacetylene torch, and evaluate the product for accuracy.

20% Troubleshoot and Diagnose a Gas Engine

Participants will collect the engine model number, compression reading, gap measurement, and spark intensity to determine and explain engine performance.

12% Install a Switch to Control a Light

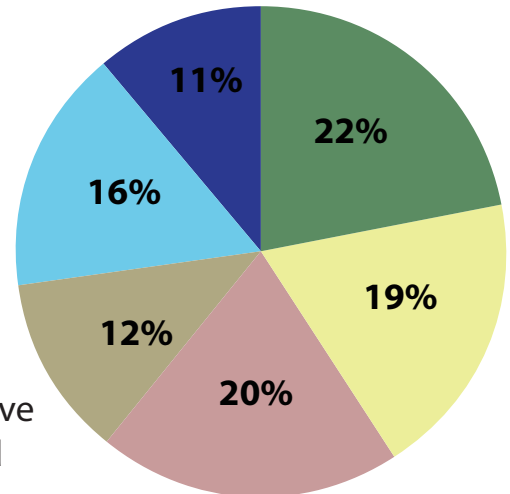
Participants will verify that the circuit and boxes are properly grounded, correctly attach the wires to the terminals, and control the light switch.

16% Mark a Common Rafter

Participants will correctly measure all specifications, mark the upper and lower plumb, and bird's mouth cuts.

11% Set Up and Instrument Leveling of the Farm Level

Participants will properly care for equipment, set up and level the instrument, and accurately record the rod reading.



Sample Job

Set Up and Instrument Leveling of the Farm Level

Maximum Time: 30 minutes

Participant Activity: The participant will set up and level the instrument and take a rod reading on a road at a predetermined fixed location.