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## **Production Agriculture**

## General Assessment Information

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**Test Type:** The Production Agriculture 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: Idaho, Indiana, Oklahoma, Pennsylvania, and Virginia.



01.0301- Agriculture Productions  
Operations, General



Career Cluster 1- Agriculture, Food,  
and Natural Resources



11-9013.02- Farmers  
and Ranchers

## Written Assessment

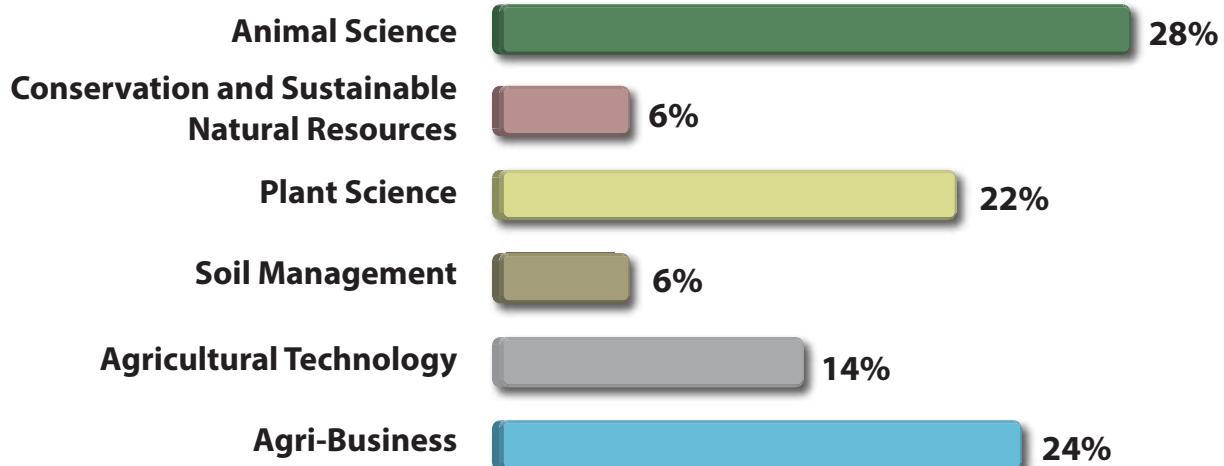
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 182

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

### Areas Covered



## Specific Standards and Competencies Included in this Assessment

### Animal Science

- Maintain animal health sanitation
- Describe anatomy and physiology
- Explain grading and judging
- Describe handling and shipment of animals and products
- Explain genetics and breeding
- Describe feeds and feeding
- Describe specific beef production operations, including breeds and types
- Describe specific dairy operations, including breeds and types
- Describe specific poultry operations, including breeds and types
- Describe specific equine operations, including breeds and types
- Describe specific aquaculture operations, including breeds and types
- Describe specific small animal operations, including breeds and types
- Describe specific swine operations, including breeds and types
- Describe specific sheep/goat operations, including breeds and types

### Conservation and Sustainable Natural Resources

- Conserve and protect water, land, and soil resources
- Recycle and manage waste products
- Research and develop new, renewable energy sources, including biofuels



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## Specific Standards and Competencies (continued)

### Plant Science

- Describe plant anatomy and physiology
- Describe taxonomy and plant identification
- Explain plant genetics, breeding, and propagation
- Formulate, mix, and properly handle agricultural chemicals
- Identify plant pests and practice pest control
- Identify and classify plant diseases
- Calculate fertilizer rates and costs
- Determine populations and planting rates
- Discuss harvesting and storage of crops
- Identify plant nutrient requirements

### Soil Management

- Describe preparation of land for efficient cropping
- Exhibit knowledge of land judging and soil management concepts
- Identify and discuss soil tests and various amendments

### Agricultural Technology

- Explain safe use and maintenance of tools and equipment
- Perform calculations and measurements used in agricultural technology
- Describe basic welding, electrical, plumbing, and carpentry practices
- Explain maintenance of agricultural and livestock containment structures
- Operate, maintain, and service engines
- Safely operate, maintain, and repair agricultural machinery



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## Specific Standards and Competencies (continued)

## Agri-Business

- Identify sources of credit
- Use appropriate tax management skills
- Describe types of farm businesses and enterprises, including cooperatives
- Identify assets, liabilities, and net worth
- Calculate net worth, income and expenses, and cash flow statements
- Identify fixed and variable costs
- Compute market values of livestock and costs of ownership
- Interpret and apply analysis of financial tools and recordkeeping systems
- Determine factors of risk management
- Identify marketing and distribution networks, channels, and processes
- Identify agricultural-based sales and marketing skills
- Identify principles of agri-business economics, including supply/demand
- Describe career opportunities and advancement pathways



## Sample Questions

**An injection placed in the vein is called**

- A. subcutaneous
- B. intramuscular
- C. intravenous
- D. intraperitoneal

**A tap root system is found in**

- A. barley
- B. wheat
- C. rice
- D. alfalfa

**Return on investment is the longest for**

- A. dairy cattle
- B. poultry (broilers)
- C. poultry (layers)
- D. beef cattle

**Which factors best determine weld quality?**

- A. amperage, length of arc, type of machine, and location of welder
- B. amperage, length of arc, speed of travel, and position of electrode
- C. width of electrode, penetration, current, and arc
- D. current, voltage, speed, and length of arc

**The purpose of crop insurance is to protect against**

- A. forces that might result in financial disaster
- B. fluctuating costs of production
- C. uncertain economic times
- D. rising interest rates

## 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.

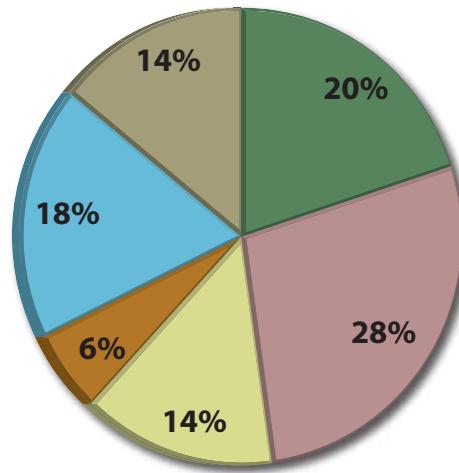
**Administration Time:** 3 hours and 5 minutes

**Number of Jobs:** 6

### Areas Covered:

#### **20% Vehicle Maintenance**

Participants will record vehicle make and model, check oil, record fuel reading, record recommended and actual tire inflation psi, check engine coolant level, complete vehicle maintenance worksheet, and return work are to original condition.



#### **28% Calculate Net Worth**

Participants will identify and list current assets, intermediate assets, long term assets, total assets, current liabilities, absence of intermediate liabilities, long term liabilities, net worth, total liabilities and capital, and current capital ratio.

#### **14% Determine Genotypes and Phenotypes (Punnett Square)**

Participants will complete a punnett square, identify four phenotypes, and list 6 genotypes and the number of each.

#### **6% Crop Leaf Identification**

Participants will identify crop leaves.

### **18% Administer an Injection**

Participants will determine medication, dosages, appropriate syringe and needle size, then prepare the syringe and injection site and administer the injection and dispose of the needle and syringe.

### **14% Compute Acreage**

Participants will compute and records total, corn, potato, wheat and total acreage.

## Sample Job

### Compute Acreage

**Maximum Time:** 30 minutes

**Participant Activity:** Participant will use diagram provided to calculate total acreage and calculate the amount of acreage that is used for corn, wheat, and potatoes.

