

Nebraska Agricultural Technology and Mechanical Systems CDE Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

This is a sample study guide. To access the full version with hundreds of questions,

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Don't worry about getting everything right, your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations, and take breaks to retain information better.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning.

7. Use Other Tools

Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly — adapt the tips above to fit your pace and learning style. You've got this!

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Questions

- 1. What role do agricultural extension services serve?**
 - A. Providing subsidies to farmers**
 - B. Offering education, research, and resources to farmers**
 - C. Regulating pesticide use**
 - D. Developing government policies**
- 2. For what purpose is an oil foam filter particularly effective?**
 - A. To enhance fuel flow**
 - B. To trap larger particles from the air**
 - C. To capture finer particles from the air**
 - D. To cool the engine components**
- 3. What does the term "agroecology" refer to?**
 - A. A discipline focused on urban agriculture**
 - B. A study of livestock health**
 - C. A scientific approach integrating ecological principles into agriculture**
 - D. A framework for crop rotation**
- 4. Which electrical device is specifically designed to melt and break a circuit if the current exceeds a set limit?**
 - A. Ground Fault Circuit Interrupter**
 - B. Service Entrance Panel**
 - C. Fuse**
 - D. Transformer**
- 5. Which two types of irrigation systems are commonly used in agriculture?**
 - A. Surface irrigation and flood irrigation**
 - B. Drip irrigation and center pivot irrigation**
 - C. Sub-irrigation and hand watering**
 - D. Sprinkler irrigation and dry farming**

- 6. What does the term "forage" refer to in agricultural context?**
- A. Food for human consumption**
 - B. Crops grown specifically for livestock feed**
 - C. Vegetables grown for market sale**
 - D. Crops cultivated for biofuel production**
- 7. What is the role of a governor in an engine?**
- A. To enhance the fuel combustion process**
 - B. To regulate engine speed by adjusting fuel supply**
 - C. To increase engine horsepower**
 - D. To monitor exhaust emissions**
- 8. Which unit is used to measure electric pressure?**
- A. Ampere**
 - B. Volt**
 - C. Watt**
 - D. Ohm**
- 9. What is the function of a soil auger?**
- A. To fertilize crops**
 - B. To extract soil samples for testing**
 - C. To compact soil**
 - D. To plant seeds at a certain depth**
- 10. What does CDE stand for in agricultural education?**
- A. Crop Development Evaluation**
 - B. Career Development Event**
 - C. Conservation Device Education**
 - D. Cultural Development Exchange**

Answers

1. B
2. C
3. C
4. C
5. B
6. B
7. B
8. B
9. B
10. B

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Explanations

1. What role do agricultural extension services serve?

- A. Providing subsidies to farmers
- B. Offering education, research, and resources to farmers**
- C. Regulating pesticide use
- D. Developing government policies

Agricultural extension services play an essential role in supporting farmers by providing education, research, and resources that help improve agricultural practices and productivity. These services are designed to disseminate knowledge about new technologies, best practices in crop and livestock management, and sustainable farming techniques. By offering workshops, training programs, and access to expert advice, extension services empower farmers to make informed decisions, which can lead to increased efficiency and profitability in their operations. Furthermore, they often act as a bridge between the agricultural community and research institutions, ensuring that the latest agricultural innovations are effectively communicated and adopted in the field. This educational focus is pivotal in enhancing the overall sustainability and success of agricultural practices.

2. For what purpose is an oil foam filter particularly effective?

- A. To enhance fuel flow
- B. To trap larger particles from the air
- C. To capture finer particles from the air**
- D. To cool the engine components

An oil foam filter is particularly effective in capturing finer particles from the air due to its design and the adhesive properties of the oil used in conjunction with the foam material. The foam structure allows for a high surface area, which is beneficial in trapping small particulate matter, including dust and dirt that can enter the engine's air intake system. The oil helps to catch and hold onto these fine particles, preventing them from bypassing the filter and potentially causing damage to the engine components. While other types of filters may be designed for specific tasks, such as trapping larger particles or enhancing fuel flow, the unique combination of foam and oil in this type of filter is specifically targeted at efficiently removing smaller debris from the air before it reaches the engine. This contributes to better overall engine performance and longevity, emphasizing the importance of using the correct filtration system for optimal engine health.

3. What does the term "agroecology" refer to?

- A. A discipline focused on urban agriculture
- B. A study of livestock health
- C. A scientific approach integrating ecological principles into agriculture**
- D. A framework for crop rotation

The term "agroecology" refers to a scientific approach that integrates ecological principles into agricultural practices. This concept emphasizes the understanding of agricultural systems through the lens of ecological science, which involves studying interactions between crops, livestock, and the environment. Agroecology aims to create sustainable farming practices that enhance biodiversity, improve soil health, and promote ecological balance, ultimately leading to more resilient agricultural systems. The focus on ecological principles allows for the consideration of the environment in agricultural decision-making, leading to practices that can reduce dependency on synthetic inputs like fertilizers and pesticides. By applying agroecological strategies, farmers can work toward sustainable development while maintaining productivity and minimizing environmental impacts. This approach also involves understanding and utilizing local ecosystems, traditional farming knowledge, and social aspects of farming, making it a holistic framework for advancing agriculture. Other choices reflect narrower areas within agriculture or are specific farming practices but do not encompass the broader, integrative, and ecological focus that defines agroecology.

4. Which electrical device is specifically designed to melt and break a circuit if the current exceeds a set limit?

- A. Ground Fault Circuit Interrupter
- B. Service Entrance Panel
- C. Fuse**
- D. Transformer

The device that is specifically designed to melt and break a circuit if the current exceeds a set limit is a fuse. A fuse serves as a safety mechanism in electrical circuits; it contains a metal conductor that melts when it reaches a specific temperature due to excessive current flow. This interruption in the circuit effectively prevents potential hazards, such as overheating and electrical fires. Fuses are rated for specific current limits, and once the current exceeds this limit, the fuse will blow, cutting off the electrical flow and protecting the rest of the system. This characteristic makes it an essential component in various applications to ensure safe operation. The other devices mentioned serve different functions. For instance, a Ground Fault Circuit Interrupter is designed to prevent electric shock by quickly shutting off power when it detects an imbalance between incoming and outgoing current. A Service Entrance Panel is responsible for distributing electricity from the utility supply to various circuits throughout a building, while a transformer alters the voltage levels in a circuit but does not have the protective function of breaking the circuit due to excessive current.

5. Which two types of irrigation systems are commonly used in agriculture?

- A. Surface irrigation and flood irrigation**
- B. Drip irrigation and center pivot irrigation**
- C. Sub-irrigation and hand watering**
- D. Sprinkler irrigation and dry farming**

Drip irrigation and center pivot irrigation are two commonly used irrigation systems in agriculture due to their efficiency and effectiveness in watering crops. Drip irrigation delivers water directly to the plant roots through a system of tubing and emitters. This targeted application reduces water wastage, decreases evaporation, and is particularly beneficial in arid regions where water conservation is crucial. By supplying water in measured amounts, drip irrigation promotes better root development and improves overall crop yield. Center pivot irrigation is another widely adopted system. It utilizes rotating sprinklers mounted on wheeled towers that move in a circular pattern around a central pivot point. This method provides even water distribution over large areas of crops, allowing farmers to cover extensive fields efficiently. Center pivot systems are especially effective in large agricultural settings, making them popular in regions with high agricultural productivity. Both systems emphasize water efficiency, which is vital for sustainable agricultural practices, especially in areas where water resources are limited. Their design also contributes to reduced labor costs and time savings, making them stand out among the various irrigation methods available to farmers.

6. What does the term "forage" refer to in agricultural context?

- A. Food for human consumption**
- B. Crops grown specifically for livestock feed**
- C. Vegetables grown for market sale**
- D. Crops cultivated for biofuel production**

In agricultural contexts, "forage" specifically refers to plant material, primarily leaves and stems, that is grown and harvested for livestock feed. This includes grass, legumes, and other types of vegetation that are used to nourish animals such as cattle, sheep, and goats. The use of forage is crucial for livestock feeding systems, particularly in grazing operations, where animals contribute to the ecosystem by consuming these plants and thereby promoting land management. The focus of forage crops is particularly important because they provide vital nutrients and energy necessary for animal health and productivity. Additionally, managing forage is essential for sustainability in agricultural practices, as it often involves crop rotation and soil conservation techniques. Other choices do not accurately capture the definition of forage: food for human consumption focuses on human dietary needs rather than livestock feeding; vegetables for market sale pertain to crops intended for direct consumer purchase; and crops cultivated for biofuel production represent a different agricultural objective that does not involve animal feeding. Thus, the correct choice clearly aligns with the established definition and usage of forage in agricultural practices.

7. What is the role of a governor in an engine?

- A. To enhance the fuel combustion process
- B. To regulate engine speed by adjusting fuel supply**
- C. To increase engine horsepower
- D. To monitor exhaust emissions

The role of a governor in an engine is primarily to regulate engine speed by adjusting the fuel supply. A governor maintains a consistent speed despite variations in load conditions. For example, when a load is applied that would naturally cause the engine speed to decrease, the governor reacts by altering the fuel supply to counteract this change and keep the engine operating at the desired speed. It achieves this by sensing the speed of the engine and using mechanical or electronic adjustments to modify how much fuel enters the engine, ensuring optimal performance and efficiency. Understanding this function is essential, as it directly impacts the operational stability of the engine. In scenarios involving heavy machinery or generators, where load conditions can fluctuate significantly, the governor plays a critical role in maintaining performance without manual adjustments from the operator.

8. Which unit is used to measure electric pressure?

- A. Ampere
- B. Volt**
- C. Watt
- D. Ohm

The unit used to measure electric pressure is the volt. In electrical terms, "voltage" refers to the potential difference between two points in a circuit. It can be thought of as the force that pushes electric charges through a conductor, much like water pressure pushes water through a pipe. When a voltage is present, it indicates that there is energy available to move electrons within a circuit, leading to electric current flow. The higher the voltage, the greater the potential for current to flow, making the volt a crucial measure in understanding how electrical systems operate. Other units listed, such as ampere, watt, and ohm, relate to different aspects of electricity. An ampere measures electric current, a watt measures power (the rate of doing work or consuming energy), and an ohm measures electrical resistance. Each plays an important role in electrical systems but does not quantify electric pressure directly like the volt does.

9. What is the function of a soil auger?

- A. To fertilize crops
- B. To extract soil samples for testing**
- C. To compact soil
- D. To plant seeds at a certain depth

The primary function of a soil auger is to extract soil samples for testing purposes, making it essential for evaluating soil health, composition, and moisture levels. Soil augers consist of a drill-like apparatus that allows users to penetrate the ground and remove soil cores efficiently. This process is crucial for agronomists, farmers, and researchers who need to analyze soil conditions to make informed decisions on crop management, fertilization, and land use. When soil samples are collected, they can be sent to laboratories for detailed analysis, helping to uncover nutrient deficiencies, pH levels, and other important indicators that influence agricultural productivity. Understanding the state of the soil aids in implementing appropriate practices that optimize crop yield and sustainability. The other options relate to different agricultural practices but do not align with the specific function of a soil auger. For instance, fertilizing crops is a separate activity focused on enhancing soil nutrients, compacting soil involves increasing density, which can impede root growth, and planting seeds at a certain depth pertains to seeding techniques rather than soil sampling.

10. What does CDE stand for in agricultural education?

- A. Crop Development Evaluation
- B. Career Development Event**
- C. Conservation Device Education
- D. Cultural Development Exchange

The term "CDE" stands for Career Development Event in the context of agricultural education. These events are designed to help students develop and demonstrate their knowledge and skills in various agricultural disciplines. CDEs provide practical experiences that can enhance learning and motivate students to engage with agricultural concepts actively. They often involve competitions where students apply their classroom knowledge in real-world scenarios, fostering skills like teamwork, leadership, and problem-solving, which are vital for their future careers. The other options, while they touch on areas related to agriculture or educational programs, do not accurately represent the concept of a CDE in agricultural education. Career Development Events specifically focus on preparing students for careers in agriculture through competitions that align with skills and knowledge required in the field. This distinction emphasizes the importance of experiential learning in shaping future professionals in agriculture.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://nebraskaagritechmechanicalsystemscde.examzify.com>

We wish you the very best on your exam journey. You've got this!