

BREEDING AND GENETICS EXAM 2 PRACTICE (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. 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.

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. 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!

Questions

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- 1. Which characteristic is most commonly associated with the calving interval in dairy cattle?**
 - A. High
 - B. Variable
 - C. Low
 - D. Moderate
- 2. What is the typical temperament level found in horses?**
 - A. High
 - B. Low
 - C. Very High
 - D. Moderate
- 3. How is scrotal circumference in beef cattle classified in terms of heritability?**
 - A. High
 - B. Moderate
 - C. Low
 - D. Very High
- 4. What is the primary benefit of knowing progeny equivalency in breeding programs?**
 - A. Minimize genetic diversity
 - B. Enhance aesthetic traits
 - C. Ensure accurate genetic evaluation
 - D. Increase breeding costs
- 5. Which trait in sheep is characterized by moderate heritability according to the provided information?**
 - A. Feed efficiency
 - B. Backfat thickness
 - C. Grease fleece weight
 - D. Staple length

- 6. What level of heritability is associated with cutting ability in horses?**
- A. High
 - B. Moderate
 - C. Low
 - D. Very high
- 7. What characteristic typically influences the growth rate in swine?**
- A. As low as 150 lbs
 - B. Moderate
 - C. As high as 300 lbs
 - D. Always very high
- 8. How does progeny equivalency impact sire selection in breeding programs?**
- A. It influences market pricing.
 - B. It establishes breed standards.
 - C. It affects genetic accuracy estimates.
 - D. It determines feed efficiency.
- 9. How does repeatability differ from heritability during calculations?**
- A. It is only calculated for traits under study
 - B. It is not squared
 - C. It is calculated for multiple traits
 - D. It requires more data
- 10. What selection method involves focusing on one trait before moving to the next?**
- A. Sequential Selection
 - B. Tandem Selection
 - C. Mixed Trait Selection
 - D. Parallel Selection

Answers

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

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Explanations

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1. Which characteristic is most commonly associated with the calving interval in dairy cattle?

- A. High
- B. Variable
- C. Low**
- D. Moderate

The characteristic most commonly associated with the calving interval in dairy cattle is low. A low calving interval implies that cows are calving more frequently, which is a desirable trait in dairy production. A shorter interval indicates efficient reproductive performance, leading to more milk production over time since cows need to be fresh (not too far along in their lactation cycle) to produce optimally. In dairy management, achieving a low calving interval is crucial as it helps maintain a steady supply of milk while improving the overall productivity of the herd. This characteristic is important as it impacts the profitability of dairy operations; cows that have low calving intervals typically indicate good reproductive health and management practices. On the contrary, higher calving intervals are often a sign of fertility issues or poor management, which can hinder dairy operations. A variable or moderate calving interval can indicate inconsistent breeding or health management, suggesting that a low interval is the targeted outcome for efficient dairy farming.

2. What is the typical temperament level found in horses?

- A. High
- B. Low
- C. Very High
- D. Moderate**

The typical temperament level found in horses is classified as moderate. This refers to the general disposition of horses, which can vary significantly among individual animals and across different breeds. A moderate temperament indicates that horses are generally responsive and can handle various situations without being overly aggressive or excessively timid. A moderate temperament allows horses to perform well in a variety of settings, from competitive events to leisurely riding experiences. It reflects a balance that enables horses to exhibit both calmness and engagement, essential for their interactions with humans and other animals. This temperamental balance is crucial for training and handling, as it helps maintain a safe and conducive environment for learning and activities. It's also important to note that while individual horses may show variations based on their genetics, upbringing, and environment, the general expectation across many breeds aligns with a moderate temperament. This understanding plays a vital role for owners, trainers, and riders in working effectively with horses.

3. How is scrotal circumference in beef cattle classified in terms of heritability?

- A. High**
- B. Moderate
- C. Low
- D. Very High

Scrotal circumference in beef cattle is classified as having high heritability, which means that a significant portion of the variation seen in this trait can be attributed to genetic differences among individuals. This high heritability suggests that breeding can effectively enhance this trait over generations, making it a reliable target for selection in breeding programs. Scrotal circumference is an important indicator of the reproductive potential in male cattle, as it is related to fertility and the production of sperm. As a result, by selecting bulls with larger scrotal circumferences, producers can improve reproductive performance in their herds. In contrast, traits with low or moderate heritability are influenced more significantly by environmental factors, making them less responsive to breeding efforts. This distinction underscores the importance of understanding heritability when developing breeding strategies aimed at enhancing desirable traits in livestock.

4. What is the primary benefit of knowing progeny equivalency in breeding programs?

- A. Minimize genetic diversity
- B. Enhance aesthetic traits
- C. Ensure accurate genetic evaluation**
- D. Increase breeding costs

Understanding progeny equivalency in breeding programs is fundamentally important for ensuring accurate genetic evaluation. Progeny equivalency refers to the concept that the performance of offspring is a reliable indicator of the parents' genetic contribution. This accuracy is crucial when selecting breeding stock based on desired traits, allowing breeders to make informed decisions that reflect the heritable characteristics of the animals involved. By accurately evaluating progeny, breeders can effectively select for desirable traits, which enhances overall breeding efficiency and success rates. This concept is instrumental in breeding programs aimed at improving specific attributes, such as yield, disease resistance, or adaptability to certain environments. Therefore, knowing progeny equivalency supports the goals of breeding programs by fostering improved genetic assessments, ultimately leading to enhanced outcomes.

5. Which trait in sheep is characterized by moderate heritability according to the provided information?

- A. Feed efficiency**
- B. Backfat thickness
- C. Grease fleece weight
- D. Staple length

The trait characterized by moderate heritability in sheep is feed efficiency. Moderate heritability indicates that there is a significant genetic component influencing the trait, but environmental factors also play a considerable role. This suggests that while genetics can contribute to the efficiency with which sheep convert feed into body mass or wool, management practices, nutrition, and environmental conditions can also have a substantial impact. Other traits, such as backfat thickness, grease fleece weight, and staple length, may exhibit different levels of heritability. For instance, traits that show high heritability are more genetically determined, so selective breeding can more effectively increase these traits. Conversely, traits with lower heritability may be influenced heavily by external factors, making genetic improvement more challenging. Understanding these heritability levels is crucial for breeding programs, as it helps breeders determine which traits can be effectively improved through selection and which may require more intensive management strategies to enhance.

6. What level of heritability is associated with cutting ability in horses?

- A. High
- B. Moderate
- C. Low**
- D. Very high

The correct answer relates to the concept of heritability, which measures how much of the variation in a trait can be attributed to genetic differences among individuals. When discussing traits such as cutting ability in horses, which is the ability to quickly and skillfully separate a cow from a herd and control its movements, research has shown that this trait typically exhibits low heritability. This low heritability implies that environmental factors, training, and individual experience play significant roles in the development of cutting ability, in addition to genetic factors. As a result, while genetics does contribute to this skill, it does not do so to a large extent, making the heritable component relatively weaker compared to skills influenced more heavily by training and environment. In contrast, traits with high or very high heritability would suggest a strong genetic influence, which is not the case here. The moderate option does not accurately reflect the findings in horse breeding literature regarding cutting ability, as it implies a stronger genetic basis than is typically observed. Thus, low heritability is the most accurate characterization of the genetic influence on cutting ability in horses.

7. What characteristic typically influences the growth rate in swine?

- A. As low as 150 lbs
- B. Moderate**
- C. As high as 300 lbs
- D. Always very high

The characteristic that typically influences the growth rate in swine is often described as moderate. This reflects a balanced approach to growth, taking into consideration factors such as genetics, nutrition, and management practices. In this context, moderate growth rates indicate that pigs can efficiently convert feed to body mass without excessive fat deposition, which is vital for maintaining overall health and optimizing production cost-effectiveness. The other choices suggest extremes in weight or growth rates, which may not accurately represent the practical growth patterns observed in swine production. For example, low weights do not typically provide enough biomass for effective market growth, while excessively high growth rates might lead to health issues or economic inefficiencies. Thus, a moderate approach is generally seen as the most sustainable and beneficial for both the animals and producers.

8. How does progeny equivalency impact sire selection in breeding programs?

- A. It influences market pricing.
- B. It establishes breed standards.
- C. It affects genetic accuracy estimates.**
- D. It determines feed efficiency.

Progeny equivalency plays a significant role in sire selection within breeding programs as it directly affects genetic accuracy estimates. When evaluating sires, breeders aim to predict the potential genetic contribution of a sire based on the performance of its progeny. Progeny equivalency ensures that the genetic evaluations account for the differing numbers of progeny for each sire, allowing for a more comparable and reliable measure of genetic potential. By assessing progeny equivalency, breeders can identify sires that have produced offspring with consistent performance traits across various conditions. This consistency is pivotal for making informed selection decisions, as it enhances the accuracy of estimates for traits such as growth rate, disease resistance, and other economically important characteristics. In contrast, the other options address different aspects of breeding programs. Market pricing may reflect the performance of progeny in a broader economic context but is not directly influenced by progeny equivalency in terms of genetic evaluation. Breed standards pertain to established benchmarks within specific breeds and do not focus on the genetic equivalency of progeny from various sires. Similarly, while feed efficiency is an important trait in breeding decisions, it is not directly determined by progeny equivalency. Understanding progeny equivalency primarily aids in improving the accuracy of genetic selection and enhancing overall

9. How does repeatability differ from heritability during calculations?

- A. It is only calculated for traits under study
- B. It is not squared**
- C. It is calculated for multiple traits
- D. It requires more data

Repeatability and heritability are crucial concepts in quantitative genetics, and understanding their differences is essential for interpreting breeding and genetics data. The correct response addresses the specific mathematical nature of repeatability in contrast to heritability. Repeatability is typically represented as a correlation coefficient that reflects the proportion of total variance attributed to variance within the same individual across different measurements or contexts. This means it does not involve squaring values, as heritability does. Heritability, particularly when discussing narrow-sense heritability, is derived from the ratio of additive genetic variance to total phenotypic variance and often presented as a squared term, which gives it a distinct mathematical form and interpretation. In terms of the other choices, the assertion that repeatability is only calculated for traits under study mischaracterizes the scope of repeatability; it can be estimated across numerous contexts or traits but isn't limited to single traits. The option suggesting that it is calculated for multiple traits does not distinctly capture the unique nature of repeatability compared to heritability, as heritability can also be estimated across traits. Finally, the notion that repeatability requires more data does not accurately reflect the methodologies typically employed to calculate these metrics, as both measures depend on the availability and quality

10. What selection method involves focusing on one trait before moving to the next?

- A. Sequential Selection
- B. Tandem Selection**
- C. Mixed Trait Selection
- D. Parallel Selection

Tandem selection is the method that involves focusing on one specific trait before addressing the next. This approach prioritizes the improvement of traits sequentially rather than simultaneously. By concentrating on one trait, breeders can optimize that particular characteristic effectively before progressing to another, ensuring each trait is given the necessary attention for improvement. Tandem selection is particularly useful when genetic resources or time are limited, allowing for targeted advancements within a breeding program. In contrast, other methods such as sequential selection and parallel selection involve different strategies for managing multiple traits simultaneously or in a more integrated manner, while mixed trait selection refers to assessing traits together without a priority sequence. Thus, tandem selection stands out for its focused approach to trait enhancement.

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://breedinggenetics2.examzify.com>

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

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