

CCE Science and Humanity Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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

- 1. How is 'theory' defined in a scientific context?**
 - A. A guess based on limited observation**
 - B. An untested assumption**
 - C. A hypothesis that has not been falsified**
 - D. A subjective interpretation of data**
- 2. What type of data is gathered by senses?**
 - A. Quantitative data**
 - B. Qualitative data**
 - C. Theoretical data**
 - D. Experimental data**
- 3. What does 'scientism' refer to in philosophical discussions?**
 - A. The application of all sciences for truth**
 - B. The belief that all truth can be obtained through science**
 - C. A methodological skepticism of scientific processes**
 - D. The study of scientific advancements**
- 4. What is meant by the term "genome"?**
 - A. A specific type of protein found in cells**
 - B. The complete set of genes or genetic material in an organism**
 - C. The process of gene expression in cells**
 - D. A technique for gene modification**
- 5. What role does empirical data play in inductive reasoning?**
 - A. It provides a basis for forming generalizations**
 - B. It dictates the outcome of predictions**
 - C. It ensures absolute certainty in conclusions**
 - D. It is irrelevant in the reasoning process**
- 6. What occurs during cellular respiration?**
 - A. Cells convert carbon dioxide into glucose**
 - B. Cells convert glucose and oxygen into energy, carbon dioxide, and water**
 - C. Cells break down fatty acids for energy**
 - D. Cells synthesize proteins from amino acids**

- 7. Which best describes the relationship between data and theory in scientific practice?**
- A. Theory trumps data**
 - B. Data is irrelevant to theory**
 - C. Data trumps theory**
 - D. Theory and data are equally important**
- 8. What role does the Center for Disease Control (CDC) play in science?**
- A. It acts as a regulatory body that limits scientific inquiry**
 - B. It serves as an authoritative group providing guidance and information in health-related science**
 - C. It solely focuses on political influences in science**
 - D. It is primarily known for its creation of new scientific theories**
- 9. Which of the following is a problem associated with scientific ethics?**
- A. Data replication**
 - B. Peer review processes**
 - C. Falsification of data**
 - D. Sharing results openly**
- 10. What is the role of enzymes in biochemical reactions?**
- A. They increase the temperature of the reaction**
 - B. They act as inhibitors to slow down reactions**
 - C. They act as catalysts to speed up reactions without being consumed**
 - D. They transform reactants into products through excess heat**

Answers

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

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Explanations

1. How is 'theory' defined in a scientific context?

- A. A guess based on limited observation
- B. An untested assumption
- C. A hypothesis that has not been falsified**
- D. A subjective interpretation of data

In a scientific context, a theory is defined as a hypothesis that has been rigorously tested and has not been falsified through experimentation and observation. This means that it has survived multiple attempts at being disproven and is supported by a significant body of evidence. Theories serve as comprehensive explanations for a broad range of phenomena and are generally accepted within the scientific community because they provide dependable frameworks for understanding complex issues. Unlike mere guesses or untested assumptions, scientific theories are developed over time and refined through empirical research and peer review, giving them a level of credibility and reliability. In contrast, the other options do not accurately capture the robust nature of a scientific theory. A guess based on limited observations lacks the necessary testing and validation, while an untested assumption does not hold the rigorous scientific grounding required to be considered a theory. Lastly, a subjective interpretation of data is not aligned with the objective analysis that underpins scientific theories, which strive for neutrality and reproducibility in their findings.

2. What type of data is gathered by senses?

- A. Quantitative data
- B. Qualitative data**
- C. Theoretical data
- D. Experimental data

The correct choice is qualitative data because this type of data is primarily descriptive and is obtained through observation using the senses. When we gather information based on characteristics such as color, texture, sound, smell, and taste, we are collecting qualitative data. This type of data focuses on the qualities or attributes of an object or phenomenon rather than numerical values. In contrast, quantitative data involves measurements and numerical values, which are not directly gathered through the senses in the same observational manner. Theoretical data relates to ideas or theories, often abstract and not directly measured through observation, while experimental data arises from conducting experiments where qualitative and quantitative assessments may occur, but it's more structured and based on controlled conditions. Therefore, observing characteristics through senses aligns best with qualitative data.

3. What does 'scientism' refer to in philosophical discussions?

- A. The application of all sciences for truth
- B. The belief that all truth can be obtained through science**
- C. A methodological skepticism of scientific processes
- D. The study of scientific advancements

Scientism refers to the belief that all truth can be obtained through science. This perspective often posits that scientific inquiry is the most reliable and valid way of understanding reality, dismissing other forms of knowledge such as philosophical, ethical, or theological perspectives as inadequate or inferior. Proponents of scientism argue that empirical evidence and scientific methods can explain all phenomena, including aspects of human existence, morality, and consciousness. This belief emphasizes the authority of science in comprehending and solving all kinds of questions, suggesting that scientific methods are universally applicable. The implications of this viewpoint can be significant in discussions about the limits of science and the nature of human experience.

4. What is meant by the term "genome"?

- A. A specific type of protein found in cells
- B. The complete set of genes or genetic material in an organism**
- C. The process of gene expression in cells
- D. A technique for gene modification

The term "genome" refers to the complete set of genes or genetic material present in an organism. This encompasses not only the genes themselves but also the non-coding sequences of DNA that may have regulatory roles or other functions. The genome serves as a blueprint for the development, functioning, growth, and reproduction of the organism. It contains all the information necessary for the production of various proteins and the regulation of biological processes, ultimately influencing traits and characteristics. In the context of genetics, understanding the genome is crucial for various applications, such as evolutionary biology, medicine, and biotechnology. By studying genomes, scientists can identify genetic variations that may lead to diseases, understand evolutionary relationships among species, and develop targeted therapies based on an individual's genetic information. The comprehensive nature of the genome makes it a fundamental concept in genetics and biology as a whole.

5. What role does empirical data play in inductive reasoning?

- A. It provides a basis for forming generalizations**
- B. It dictates the outcome of predictions
- C. It ensures absolute certainty in conclusions
- D. It is irrelevant in the reasoning process

Empirical data plays a crucial role in inductive reasoning by serving as the foundational evidence upon which generalizations are built. Inductive reasoning involves observing specific instances or examples and then using those observations to form broader conclusions or theories. Without empirical data, which consists of observed and measured phenomena, there would be no concrete basis for making these generalizations. The reliability and validity of the conclusions drawn through inductive reasoning heavily depend on the quantity and quality of the empirical data available. Thus, it directly influences the strength of the generalizations made, establishing a connection between observations and conclusions drawn from them.

6. What occurs during cellular respiration?

- A. Cells convert carbon dioxide into glucose
- B. Cells convert glucose and oxygen into energy, carbon dioxide, and water**
- C. Cells break down fatty acids for energy
- D. Cells synthesize proteins from amino acids

During cellular respiration, the primary function is for cells to convert glucose and oxygen into energy. This process is essential for producing adenosine triphosphate (ATP), which cells use as a direct energy source for various metabolic activities. As glucose is broken down in the presence of oxygen, it undergoes a series of biochemical reactions that release energy, carbon dioxide, and water. The overall chemical equation for this process can be summarized as: $\text{Glucose} + \text{Oxygen} \rightarrow \text{Energy (ATP)} + \text{Carbon Dioxide} + \text{Water}$. This transformation is crucial for sustaining life, as it supports all cellular functions by providing energy. In contrast, the other options represent different biological processes. For instance, converting carbon dioxide into glucose pertains to photosynthesis, which predominantly occurs in plants, not cellular respiration. The breakdown of fatty acids for energy relates more to lipid metabolism than to the primary pathway of cellular respiration featuring glucose. Lastly, the synthesis of proteins from amino acids describes protein synthesis, a completely different process that involves ribosomes and other cellular mechanisms, rather than energy production through respiration.

7. Which best describes the relationship between data and theory in scientific practice?

- A. Theory trumps data
- B. Data is irrelevant to theory
- C. Data trumps theory**
- D. Theory and data are equally important

In scientific practice, the relationship between data and theory is intricate and symbiotic, highlighting the importance of both elements. The idea that data trumps theory suggests that empirical evidence gathered through observation and experimentation takes precedence when developing scientific understanding. When researchers collect data, they gather valuable insights into natural phenomena that can either support or challenge existing theories. If the data contradicts a prevailing theory, scientists are compelled to reevaluate and either modify the theory or develop a new one that better explains the observed facts. This process emphasizes the fundamental role that data plays in shaping scientific understanding, as theories must align with empirical evidence to be considered valid. While both theories and data are vital in the scientific method, data serves as a foundation for validating or refuting theories. Scientific theories gain credibility by consistently being corroborated through multiple lines of data. Without reliable data, theories would lack the necessary support to be deemed scientifically sound. Thus, understanding that data drives scientific inquiry and theory development underscores the importance of empirical evidence in the pursuit of knowledge.

8. What role does the Center for Disease Control (CDC) play in science?

- A. It acts as a regulatory body that limits scientific inquiry**
- B. It serves as an authoritative group providing guidance and information in health-related science**
- C. It solely focuses on political influences in science**
- D. It is primarily known for its creation of new scientific theories**

The Center for Disease Control (CDC) plays an essential role in public health by serving as an authoritative group that provides guidance and information related to health-related science. This function is crucial for informing policy, implementing health initiatives, and educating both the public and healthcare professionals about disease prevention, control, and safety measures. The CDC conducts research and collects data on various health concerns, allowing them to issue recommendations that are based on empirical evidence and scientific research. This guidance is integral in responding to health crises, developing public health campaigns, and establishing effective health policies. By synthesizing scientific knowledge and disseminating it widely, the CDC helps shape health practices and can influence health outcomes at both community and national levels. Thus, its role extends far beyond simply acting as a regulatory authority or engaging only in political discourse; it is fundamentally about enhancing public health through science-based information and support.

9. Which of the following is a problem associated with scientific ethics?

- A. Data replication**
- B. Peer review processes**
- C. Falsification of data**
- D. Sharing results openly**

The correct choice highlights a significant issue within scientific ethics: the falsification of data. Falsifying data undermines the integrity of scientific research and the trust placed in the scientific community. When researchers manipulate or fabricate data, they are not only compromising their own work but also affecting the broader field by potentially leading others to make decisions based on false information. This behavior can have serious consequences, including the misallocation of resources, harm to public health, and erosion of public trust in science. The integrity of research relies heavily on the accurate representation of findings; therefore, addressing the issue of data falsification is critical for maintaining ethical standards in scientific inquiry. Efforts to uphold ethical practices in research involve strict guidelines and consequences for those who engage in dishonest behaviors.

10. What is the role of enzymes in biochemical reactions?

- A. They increase the temperature of the reaction**
- B. They act as inhibitors to slow down reactions**
- C. They act as catalysts to speed up reactions without being consumed**
- D. They transform reactants into products through excess heat**

The role of enzymes in biochemical reactions is to act as catalysts that speed up reactions without being consumed in the process. Enzymes lower the activation energy required for a reaction to take place, making it easier and faster for reactants to be converted into products. This acceleration is particularly important in biological systems, where many chemical reactions occur at relatively low temperatures and must happen quickly to sustain life functions. Enzymes achieve this by providing an alternative reaction pathway that has a lower energy barrier. They bind to substrates to form an enzyme-substrate complex, which stabilizes the transition state and facilitates the transformation into product molecules. After the reaction, the enzyme is released unchanged and can catalyze subsequent reactions, enabling numerous cycles of catalysis. The other options present incorrect roles or misunderstandings about enzymes. Enzymes do not increase the temperature of the reaction, as they can facilitate reactions at physiological temperatures. Instead of acting as inhibitors, which would slow down reactions, enzymes enhance the rate of reactions. Lastly, the idea that they transform reactants into products through excess heat is misleading, as enzymes operate effectively at controlled temperatures without the need for heat to drive the reaction. Their action highlights the precision and efficiency that biological systems require.

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://ccesciencehumanity.examzify.com>

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