TEAS 7 SCIENTIFIC REASONING PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 15

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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.

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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!

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Questions

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1. Which statement about the scientific method is most accurate?

A. A single anecdote can establish a universal truth.

B. Observations lead to hypotheses, and theories are supported by substantial evidence.

C. Theories are always unchangeable.

D. Hypotheses are never testable.

2. The backbone of DNA is formed by bonds that connect sugar and phosphate through:

A. Covalent bonds

B. Hydrogen bonds

C. Ionic bonds

D. Metallic bonds

3. Which phase change is described as liquid turning into gas?

A. Condensation

B. Sublimation

C. Deposition

D. Evaporation

4. What is Hardy-Weinberg principle used to describe?

A. The rate of enzyme activity

B. The expected allele and genotype frequencies remain constant from generation to generation in the absence of evolutionary influences

C. The structure of a DNA double helix

D. The mechanism of transcription

5. Which type of simple sugar is a monosaccharide that serves as a building block for larger carbohydrates?

A. Fructose

B. Glucose

C. Galactose

D. Maltose

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6. Which organ produces bile and is involved in metabolic regulation, detoxification, and storage of nutrients?

A. Gallbladder

B. Pancreas

C. Liver

D. Spleen

7. What is the purpose of a control group in experimental design?

A. To demonstrate what happens when a treatment is applied

B. To demonstrate what happens without a treatment by comparing to a baseline

C. To confuse the outcome

D. To expedite the experiment

8. Which base pairs with cytosine on the opposite DNA strand?

A. Cytosine pairs with thymine

B. Cytosine pairs with guanine

C. Cytosine pairs with adenine

D. Cytosine pairs with cytosine

9. Which prefix represents 10^1 in the metric system?

A. Deka

B. Kilo

C. Mega

D. Giga

10. Tachycardia is defined as what?

A. Low blood pressure

B. Irregular heartbeat

C. Slow heart rate

D. Fast heart rate

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Answers

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

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Explanations

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1. Which statement about the scientific method is most accurate?

A. A single anecdote can establish a universal truth.

B. Observations lead to hypotheses, and theories are supported by substantial evidence.

C. Theories are always unchangeable.

D. Hypotheses are never testable.

Understanding how the scientific method works starts with how observations lead to testable ideas and how explanations are evaluated. Observations give rise to hypotheses—testable statements that can be explored through experiments or further data collection. When a wide range of evidence repeatedly supports a hypothesis, it strengthens and contributes to a theory, which is a well-supported explanation of many related phenomena. Theories aren't unchangeable; they're refined or revised as new data and better methods emerge. Hypotheses are designed to be testable and falsifiable, with predictions that experiments can confirm or disprove. An isolated anecdote isn't enough to establish a universal truth because it may not reflect broader patterns or be free from bias.

2. The backbone of DNA is formed by bonds that connect sugar and phosphate through:

A. Covalent bonds

B. Hydrogen bonds

C. Ionic bonds

D. Metallic bonds

The backbone is formed by covalent bonds called phosphodiester linkages, which connect the sugar of one nucleotide to the phosphate of the next. This creates a strong sugar–phosphate chain with directionality from 5′ to 3′. The bases stick out from this backbone and pair with their partners on the opposite strand through hydrogen bonds, which hold the two strands together but do not form the backbone. Ionic or metallic bonds aren't the way the DNA strands are linked in biological systems.

3. Which phase change is described as liquid turning into gas?

A. Condensation

B. Sublimation

C. Deposition

D. Evaporation

Liquid turning into gas is evaporation. In this process, molecules at the surface gain enough energy to overcome the attractive forces holding them in the liquid and escape into the air as vapor. Evaporation can occur at any temperature below the liquid's boiling point and tends to cool the remaining liquid because the highest-energy molecules leave first. This is different from boiling, which happens throughout the liquid at a specific temperature when vapor pressure matches the surrounding pressure. Condensation is the reverse (gas to liquid), sublimation is solid to gas, and deposition is gas to solid. An everyday example is a puddle gradually drying up as it evaporates.

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4. What is Hardy-Weinberg principle used to describe?

A. The rate of enzyme activity

B. The expected allele and genotype frequencies remain constant from generation to generation in the absence of evolutionary influences

C. The structure of a DNA double helix

D. The mechanism of transcription

This principle explains why allele and genotype frequencies in a population can stay steady across generations if no evolutionary forces are at work. In a large, randomly mating population with no mutation, no migration, no natural selection, and no genetic drift, the frequencies of the two alleles add up to 1 (p + q = 1), and the genotype frequencies follow p^2, 2pq, and q^2. Under these conditions, these proportions remain constant from generation to generation, so the genetic makeup of the population is stable unless something disrupts it. This concept is not about enzyme activity, DNA structure, or transcription, but about the constancy of allele and genotype frequencies when evolution is not acting.

5. Which type of simple sugar is a monosaccharide that serves as a building block for larger carbohydrates?

A. Fructose

B. Glucose

C. Galactose

D. Maltose

Monosaccharides are the simple sugars that serve as building blocks for larger carbohydrates. Glucose fits this role best because it is the primary unit used to assemble starch, glycogen, and cellulose in many organisms, making it the classic building block for polysaccharides. Fructose, while a monosaccharide, is a ketose and is not typically the repeating backbone of polysaccharides. Galactose is another monosaccharide important in lactose metabolism, but it is not the main polymer backbone. Maltose is a disaccharide formed from two glucose units, so it is not a monosaccharide at all.

6. Which organ produces bile and is involved in metabolic regulation, detoxification, and storage of nutrients?

A. Gallbladder

B. Pancreas

C. Liver

D. Spleen

The liver is the organ that produces bile and coordinates metabolic regulation, detoxification, and nutrient storage. Hepatocytes manufacture bile, which helps emulsify fats for digestion and flows into bile ducts to reach the digestive tract. Beyond digestion, the liver fine-tunes energy and nutrient balance: it stores glycogen, can convert between glucose and glycogen to maintain blood sugar, and processes amino acids and lipids. Detoxification is another central job, with liver enzymes metabolizing drugs and toxins, transforming bilirubin, and converting ammonia into urea for excretion. It also serves as a storage site for vitamins and minerals, along with other nutrients. The gallbladder mainly stores bile, the pancreas provides digestive enzymes and bicarbonate, and the spleen handles immune functions and red blood cell turnover, so they don't fit the described roles as comprehensively as the liver does.

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7. What is the purpose of a control group in experimental design?

A. To demonstrate what happens when a treatment is applied

B. To demonstrate what happens without a treatment by comparing to a baseline

C. To confuse the outcome

D. To expedite the experiment

Having a baseline for comparison is essential. A control group shows what happens when the independent variable is not applied, under the same conditions as the treated group. This sets a reference point so that any difference observed can be attributed to the treatment rather than random variation or other factors. By comparing the outcomes between groups, you can determine the actual effect of the treatment and rule out alternative explanations. Sometimes the control receives no treatment or a standard/sham treatment to keep conditions identical and reduce bias. This is why the purpose is to demonstrate what happens without a treatment by comparing to a baseline. The other options describe what happens to the treated group, not the role of the control, or are not goals of experimental design.

8. Which base pairs with cytosine on the opposite DNA strand?

A. Cytosine pairs with thymine

B. Cytosine pairs with guanine

C. Cytosine pairs with adenine

D. Cytosine pairs with cytosine

In DNA, bases pair with specific partners across the two strands to keep the double helix uniform and stable. Cytosine pairs with guanine because they fit together with the right hydrogen-bonding pattern and complementary shapes, forming three hydrogen bonds that help stabilize the helix. This purine-pyrimidine pairing preserves the consistent width of the DNA ladder. Pairing cytosine with thymine or with adenine would disrupt the hydrogen-bonding pattern and the geometry of the helix, leading to instability. Pairing cytosine with cytosine would also distort the structure because two pyrimidines together don't maintain the proper spacing. So, the base that pairs with cytosine on the opposite DNA strand is guanine.

9. Which prefix represents 10^1 in the metric system?

A. Deka

B. Kilo

C. Mega

D. Giga

In the metric system, prefixes attach to a unit to show powers of ten. Ten is indicated by the prefix deka (often written as deka or deca). So 10^1 is represented by Deka. The other options are higher powers: Kilo for 10^3, Mega for 10^6, and Giga for 10^9.

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10. Tachycardia is defined as what?

A. Low blood pressure

B. Irregular heartbeat

C. Slow heart rate

D. Fast heart rate

Tachycardia is a fast heart rate. In adults at rest, a heart rate above about 100 beats per minute is considered tachycardia, while normal resting rates are roughly 60–100 bpm (athletes may run lower). It can be a normal response to exercise, fever, or stress, but persistent tachycardia can signal dehydration, anemia, thyroid overactivity, or heart rhythm problems. The other descriptions refer to different issues: a slow heart rate is bradycardia, an irregular heartbeat indicates an arrhythmia, and low blood pressure is a separate condition.

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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://teas7scientificreasoning.examzify.com

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

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