

SCIENCE, TECHNOLOGY, AND BUSINESS PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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. In the Atari VCS, ROM cartridges were primarily used for what purpose?

- A. Providing power
- B. Receiving updates
- C. Storing game data
- D. Connecting to internet

2. What does Atari VCS stand for?

- A. Video Computer System
- B. Video Gaming Console
- C. Virtual Console System
- D. Visual Control System

3. Kindred Capital is described as what kind of organization?

- A. A university research fund
- B. A venture capital company co-founded by Leila Rastegar Zegna that released a 10-item list of predictions for the future in 2018
- C. A government agency
- D. A nonprofit think tank

4. How does Wizard of Oz testing differ from Mechanical Turk?

- A. They are identical in mechanism and purpose.
- B. The difference is intention and reveal at the end; Wizard of Oz is used for research and is revealed at the end.
- C. Wizard of Oz uses no human operators.
- D. Mechanical Turk uses no AI behind the scenes.

5. The Three Ways DevOps concept is best described as a collaboration between which two functions?

- A. Development + Operation
- B. Design + Marketing
- C. Customer Support + Sales
- D. Finance + Compliance

- 6. Which paradox demonstrates that adding roads can increase travel time due to driver behavior?**
- A. Desire paths
 - B. Vector-based navigation
 - C. Braess's paradox
 - D. An NP-hard problem
- 7. The 'shoes vs. map ideology' describes the dilemma of choosing between a clear plan and an extremely fast development and operations team. Which option best captures this concept?**
- A. Shoes vs Map ideology
 - B. Chaos Monkey
 - C. Netflix pivot
 - D. Sashimi model
- 8. Homing pigeons navigate back to their home using which strategy?**
- A. A detailed olfactory map of their home.
 - B. Wag signaling.
 - C. Earth's magnetic field navigation.
 - D. Sun compass orientation.
- 9. Which paradox states that adding more roads can paradoxically lengthen overall travel time?**
- A. Permeable pavement
 - B. Desire paths
 - C. Vector-based navigation
 - D. Braess's paradox
- 10. A heart transplant is typically expected to last about how many years?**
- A. 5 years
 - B. 10 years
 - C. 12-14 years
 - D. 15 years

Answers

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

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Explanations

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1. In the Atari VCS, ROM cartridges were primarily used for what purpose?

- A. Providing power
- B. Receiving updates
- C. Storing game data**
- D. Connecting to internet

The main idea is that ROM cartridges carry the game program and assets in read-only memory, and the console runs directly from that cartridge. Each cartridge holds the software the game needs—code for the CPU, graphics, sound data, and level information—so swapping cartridges loads a different game without changing the system itself. The memory is non-volatile, so the game remains stored even when the system is powered off. Cartridges didn't provide power and there wasn't a built-in internet connection for updates; the cartridge simply supplies the software the console executes.

2. What does Atari VCS stand for?

- A. Video Computer System**
- B. Video Gaming Console
- C. Virtual Console System
- D. Visual Control System

Video Computer System is the correct expansion. Atari used this name for its first home console released in 1977 to highlight that the device combined video output with a computer-like, programmable system that used interchangeable game cartridges. The three parts of the acronym map to: Video (the display output to a TV), Computer (the processor-based, programmable nature), and System (the full package of hardware, controllers, and software). That branding differs from the other options—Video Gaming Console would emphasize gaming rather than the computer-like aspect, Virtual Console System is a more modern term not connected to Atari, and Visual Control System isn't part of Atari's naming.

3. Kindred Capital is described as what kind of organization?

- A. A university research fund
- B. A venture capital company co-founded by Leila Rastegar Zegna that released a 10-item list of predictions for the future in 2018**
- C. A government agency
- D. A nonprofit think tank

The main idea being tested is recognizing what kind of organization Kindred Capital is based on what it does. Kindred Capital is described as a venture capital company, which means its core activity is investing in early-stage startups and supporting founders with capital and strategic guidance. That aligns with the role of a private investment firm rather than an academic fund, a government body, or a nonprofit think tank. The option frames Kindred Capital as a venture capital company co-founded by a specific person and notes a 2018 list of predictions, but those details are extra context around its identity as an investment firm. The other types—university research fund, government agency, nonprofit think tank—do not fit its business model or typical activities, which focus on funding and helping startups rather than conducting academic research, running government programs, or producing policy analysis. So the best description is that Kindred Capital is a venture capital company.

4. How does Wizard of Oz testing differ from Mechanical Turk?

- A. They are identical in mechanism and purpose.
- B. The difference is intention and reveal at the end; Wizard of Oz is used for research and is revealed at the end.**
- C. Wizard of Oz uses no human operators.
- D. Mechanical Turk uses no AI behind the scenes.

The main idea here is how the involvement of a human is used in the user's experience and whether that involvement is revealed later. Wizard of Oz testing lets participants interact with what seems like an autonomous system, but a human is actually behind the scenes producing the responses. The goal is to study how people react to what they think is intelligent behavior, and the deception is typically disclosed after the session in a debrief. Mechanical Turk, on the other hand, is a crowdsourcing platform where real people perform the tasks—there isn't a hidden operator shaping the interaction in real time for the user. It's about collecting data, labeling, or training AI with human input, not testing user perception of a pretend autonomous system. That difference in purpose and the post-session debrief is what sets Wizard of Oz apart from Mechanical Turk.

5. The Three Ways DevOps concept is best described as a collaboration between which two functions?

- A. Development + Operation**
- B. Design + Marketing
- C. Customer Support + Sales
- D. Finance + Compliance

The main idea being tested is that DevOps is about joining the teams that create software with the teams that run and maintain it. In the Three Ways framework, the emphasis is on uniting those who develop code with those who deploy and operate the system so releases can happen faster and more reliably. When developers and operations work as one team, automation, continuous delivery, and shared responsibility reduce delays, cut handoffs, and create quick feedback loops from production back to the code. The other pairings involve functions like design and marketing, or customer-facing roles like support and sales, or finance and compliance. These are important in their own right but do not capture the DevOps focus on integrating software development with its operational lifecycle.

6. Which paradox demonstrates that adding roads can increase travel time due to driver behavior?

- A. Desire paths
- B. Vector-based navigation
- C. Braess's paradox**
- D. An NP-hard problem

This question tests how selfish routing in a congested network can make travel times worse when a new road is added. In a traffic network, drivers pick the quickest route given current congestion, so the overall flow settles into an equilibrium where no one can improve by changing routes. Braess's paradox shows that adding a new road can disrupt that equilibrium: drivers try to take what looks like the fastest path, end up sharing the new link, and the congestion on all routes increases. The result can be a higher average travel time than before the road was added, even though more capacity exists. This happens because individual choices don't account for their collective impact on the system. Desire paths describe informal shortcuts people actually use, not a paradox about network changes. Vector-based navigation is a method for routing, not a paradox. An NP-hard problem refers to computational difficulty, not to traffic behavior in networks.

7. The 'shoes vs. map ideology' describes the dilemma of choosing between a clear plan and an extremely fast development and operations team. Which option best captures this concept?

A. Shoes vs Map ideology

B. Chaos Monkey

C. Netflix pivot

D. Sashimi model

The main idea here is the tension between having a clear plan and enabling a fast, highly capable team to move quickly. The shoes vs map image uses two simple ideas: a map represents a well-defined plan with direction and predictability, while shoes represent a fast, agile team that can adapt, iterate, and deliver rapidly. The question highlights this trade-off and asks for the term that best captures it. That phrase directly names the balance between rigid planning and rapid execution, making it the best fit. Chaos Monkey is about deliberately introducing failures to test reliability, not about choosing between planning and speed. Netflix pivot refers to a strategic shift the company made, not the general trade-off between a plan and a fast team. Sashimi model points to a different architectural or development approach and doesn't embody the planning-versus-speed dilemma described here.

8. Homing pigeons navigate back to their home using which strategy?

A. A detailed olfactory map of their home.

B. Wag signaling.

C. Earth's magnetic field navigation.

D. Sun compass orientation.

Homing pigeons rely on a map-like sense built from smells. They learn the specific odor landscape around their home loft as they move through the area, and these odor patterns create a mental map of where home should be. When released away from home, they compare the odors they smell at their current location with this internal map to figure out which direction leads toward home and how far they are from it. This olfactory map provides the crucial information about "where" they are, rather than just "which direction to go," which is why it best explains their ability to return home. Other cues like the sun or Earth's magnetic field help with orientation, but the detailed odor-based map is the key mechanism for locating home.

9. Which paradox states that adding more roads can paradoxically lengthen overall travel time?

A. Permeable pavement

B. Desire paths

C. Vector-based navigation

D. Braess's paradox

Braess's paradox demonstrates that adding more roads can increase overall travel time when drivers act in their own self-interest. In a network where each driver chooses the fastest route for themselves, a new link can create a seemingly quicker path. However, as many drivers switch to this new route, congestion shifts and the overall distribution of traffic becomes less efficient, making all routes slower than before. The result is a higher average commute time despite more road capacity. This contrasts with the idea that adding roads should always ease congestion, highlighting the difference between individual routing behavior and the system-wide optimum. Other terms describe different concepts (environmental effects of roads, informal shortcut paths, or routing methods) and don't capture this counterintuitive outcome.

10. A heart transplant is typically expected to last about how many years?

- A. 5 years
- B. 10 years
- C. 12-14 years
- D. 15 years**

Long-term success after a heart transplant rests on keeping rejection at bay and preventing infections, while closely monitoring for chronic changes in the graft. With modern immunosuppressive therapy and careful follow-up, many recipients now live into the 15-year range, and some exceed it. Individual outcomes vary based on age, overall health, adherence to medications, and complications, but 15 years is a common, realistic ballpark for how long a transplanted heart can function well. Shorter estimates, while they reflect earlier eras, don't reflect current outcomes as accurately.

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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://sciencetechbusiness.examzify.com>

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

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