

SAFETY INSPECTION OF IN-SERVICE BRIDGES 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. Appraisal is a judgement of a bridge component in comparison to current standards.**
 - A. True
 - B. False
 - C. Depends on component
 - D. Infrequently

- 2. Which set of conditions is favorable for fungi to grow in wood?**
 - A. Temperature: 60 to 70 F; Oxygen: 10%; Moisture below 10%; Food: glue
 - B. Temperature: 50 to 60 F; Oxygen: 5%; Moisture: 5%; Food: water
 - C. Temperature: 75 to 85 degrees F; Oxygen: 20% of volume of wood must be air; Moisture: at least 20%; Food: the bridge
 - D. Temperature: 90 to 100 F; Oxygen: 50%; Moisture: 5%; Food: metal

- 3. What device is used to suspend a single inspector for rope-access inspections?**
 - A. Bosun Chair
 - B. Climbers
 - C. Mobile Scaffold
 - D. Ladder

- 4. Which pair of loads are both considered secondary live loads?**
 - A. Vehicles and Parapets
 - B. Dead Load and Fatigue
 - C. Pedestrian Load and Ice Pressure
 - D. Primary Live Load and Ice Pressure

- 5. Internal Redundancy is described as:**
 - A. Continuity of load path from span to span
 - B. If one member fails, load redistributed to other members
 - C. The three main components of a bridge
 - D. Creation of multiple load paths by elements that are mechanically fastened together

- 6. The term for long-term, irreversible deformation under sustained load is**
- A. Creep
 - B. Elasticity
 - C. Plasticity
 - D. Shrinkage
- 7. Classification (A/I) is categorized as which?**
- A. Appraisal
 - B. Assessment
 - C. Evaluation
 - D. Inventory
- 8. The National Bridge Inventory (NBI) describes which document?**
- A. End Treatments
 - B. Culvert Barrel
 - C. National Bridge Inventory (NBI)
 - D. National Bridge Inspection Standards (NBIS)
- 9. Ice pressure on a bridge is categorized as which load type?**
- A. Primary Live Load
 - B. Dead Load
 - C. Secondary Live Load
 - D. Fatigue
- 10. Knot is the separation of wood fibers due to intergrown limbs.**
- A. Groups of cells running from the center of the tree horizontally to the bark
 - B. Separations of the wood fibers due to intergrown limbs
 - C. Separations of the wood fibers, through growth rings, parallel to grain
 - D. Advanced checks that extend completely through the wood

Answers

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

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Explanations

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1. Appraisal is a judgement of a bridge component in comparison to current standards.

- A. True**
- B. False
- C. Depends on component
- D. Infrequently

Appraisal is the professional judgement of a bridge component by comparing its condition to current standards. In in-service bridge safety practice, engineers assess signs of wear, damage, and remaining capacity, then weigh those observations against the latest design criteria and safety rules. This benchmarking to current standards is essential because standards evolve; a feature that was acceptable decades ago may fail under today's requirements, so the appraisal determines whether the component is acceptable, needs repair, or should be replaced. For example, a crack seen in a member might be allowed under older criteria but would prompt action under current ones, illustrating why appraisal is anchored in current standards. The idea is not that it depends on the component or that appraisal is rare; it is a routine judgment applied across components to ensure safety and serviceability under the standards in effect now.

2. Which set of conditions is favorable for fungi to grow in wood?

- A. Temperature: 60 to 70 F; Oxygen: 10%; Moisture below 10%; Food: glue
- B. Temperature: 50 to 60 F; Oxygen: 5%; Moisture: 5%; Food: water
- C. Temperature: 75 to 85 degrees F; Oxygen: 20% of volume of wood must be air; Moisture: at least 20%; Food: the bridge**
- D. Temperature: 90 to 100 F; Oxygen: 50%; Moisture: 5%; Food: metal

Fungi need three things to grow in wood: warmth, enough moisture, and oxygen, plus a food source (the wood itself). The favorable scenario provides a warm range around 75–85°F, which falls inside the common growth range for many wood-rotting fungi. It also offers ample oxygen—about atmospheric levels—so the fungi can respire as they grow. The moisture is at least about 20%, giving enough free water for metabolic processes. With wood as the nutrient source, there's a ready supply of food for the fungal network to expand. The other options fail because they either lowball the moisture, push the temperature outside the optimal range, or present an unsuitable "food" source (for example, substances like glue or metal are not the typical nutrient for fungi, and moisture or temperature levels that are too dry or extreme hinder growth).

3. What device is used to suspend a single inspector for rope-access inspections?

- A. Bosun Chair**
- B. Climbers
- C. Mobile Scaffold
- D. Ladder

In rope-access inspections, you need a device that lets a single person be supported from a rope while you work. The bosun chair is exactly that: a seat attached to a rope that supports one worker, keeping you in a stable, seated position so you can inspect the surface with both hands free. It's designed for solo use and is typically part of a safety system with a backup line or belay for redundancy. The other options aren't used to suspend a single inspector from a rope: climbers are people, not equipment; a mobile scaffold is a ground-based platform, not a rope-suspension device; and a ladder is for climbing up and down, not for suspended work at height.

4. Which pair of loads are both considered secondary live loads?

- A. Vehicles and Parapets
- B. Dead Load and Fatigue
- C. Pedestrian Load and Ice Pressure**
- D. Primary Live Load and Ice Pressure

Secondary live loads are the extra, non-primary live loads a bridge may experience in service, beyond the main traffic the structure is designed to carry. Pedestrian load qualifies as a live load because it comes from people crossing, but it is typically not the primary design load; it's an additional, less frequent demand that must be accounted for. Ice pressure is a seasonal, transient load on the deck that isn't a permanent dead load, so it's treated as another secondary live load in many design guides. Together, these two loads represent secondary live loads because they are variable and not the main design vehicle load. The other options mix different categories: vehicles are a primary live load, parapets contribute to dead/structure loads rather than a live load, dead load and fatigue aren't live loads, and including the primary live load disqualifies them from being both secondary.

5. Internal Redundancy is described as:

- A. Continuity of load path from span to span
- B. If one member fails, load redistributed to other members
- C. The three main components of a bridge
- D. Creation of multiple load paths by elements that are mechanically fastened together**

Internal redundancy is about creating multiple load paths inside a bridge through elements that are mechanically fastened together, so forces can be carried by alternative routes if part of the structure is damaged. This description directly captures how redundancy is built into the system—by tying together members so loads don't rely on a single path. The other options describe related ideas but not the mechanism: continuity of load path across spans isn't about multiple internal routes, redistribution after a member fails is a consequence of redundancy rather than its definition, and the option about the three main components of a bridge is unrelated.

6. The term for long-term, irreversible deformation under sustained load is

- A. Creep**
- B. Elasticity
- C. Plasticity
- D. Shrinkage

Creep is the time-dependent deformation that occurs when a material is kept under a constant load for a long period, and part of that deformation remains even after the load is removed. This distinguishes it from elasticity, which is fully reversible, and from plastic deformation, which is permanent but not necessarily driven by time under constant load. Shrinkage is a moisture-related size change, not caused by sustained mechanical stress. In bridges, creep matters because concrete (and some metals) gradually deform under sustained loads, leading to increased deflections and changes in stresses and joint movements over years.

7. Classification (A/I) is categorized as which?

- A. Appraisal
- B. Assessment
- C. Evaluation
- D. Inventory**

Classification of A/I is inventory because it centers on cataloging and listing the items, assets, and components that exist, along with key details for tracking and maintenance. An inventory provides the factual record of what is present, where it is, and in what condition, which is essential for planning repairs, replacements, and budgeting. The other terms focus on judgments—value, significance, or merit—rather than simply recording what exists, so they don't fit as well in this context.

8. The National Bridge Inventory (NBI) describes which document?

- A. End Treatments
- B. Culvert Barrel
- C. National Bridge Inventory (NBI)**
- D. National Bridge Inspection Standards (NBIS)

The National Bridge Inventory is the catalog that lists all bridges and their attributes. Because it names itself as the inventory, the document described by the National Bridge Inventory is the National Bridge Inventory itself. In other words, the NBI is the inventory, so the document it describes is the National Bridge Inventory (it's not a set of standards or a specific bridge component). The other options refer to concrete bridge elements or to a separate set of inspection standards, not to the inventory itself.

9. Ice pressure on a bridge is categorized as which load type?

- A. Primary Live Load
- B. Dead Load
- C. Secondary Live Load**
- D. Fatigue

The main idea is how loads on a bridge are classified. Ice pressure is a variable, weather-driven external force that isn't part of the structure's permanent weight and isn't the standard traffic the bridge is designed to carry. The usual traffic load represents the primary live load. Ice pressure adds on top of that under certain conditions, so it's treated as a secondary live load. It isn't a dead load, which would be the fixed weight of the bridge itself, and it isn't fatigue, which refers to a failure mechanism from repeated loading rather than a distinct load category.

10. Knot is the separation of wood fibers due to intergrown limbs.

- A. Groups of cells running from the center of the tree horizontally to the bark
- B. Separations of the wood fibers due to intergrown limbs**
- C. Separations of the wood fibers, through growth rings, parallel to grain
- D. Advanced checks that extend completely through the wood

A knot forms where a branch is intergrown with the trunk, so the wood fibers around that branch become disrupted and wrap around the limb. This creates a distinct separation in the grain that points to the presence of a knot. Knots matter because the irregular grain weakens the wood and changes its strength and stiffness, especially in structural applications like bridges. The description provided—separations of the wood fibers due to intergrown limbs—matches this phenomenon exactly. The other statements describe different wood features (radial growth rays, grain-aligned checks, or through-crack checks) and are not knots.

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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://safetyinspecinservicebridges.examzify.com>

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

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