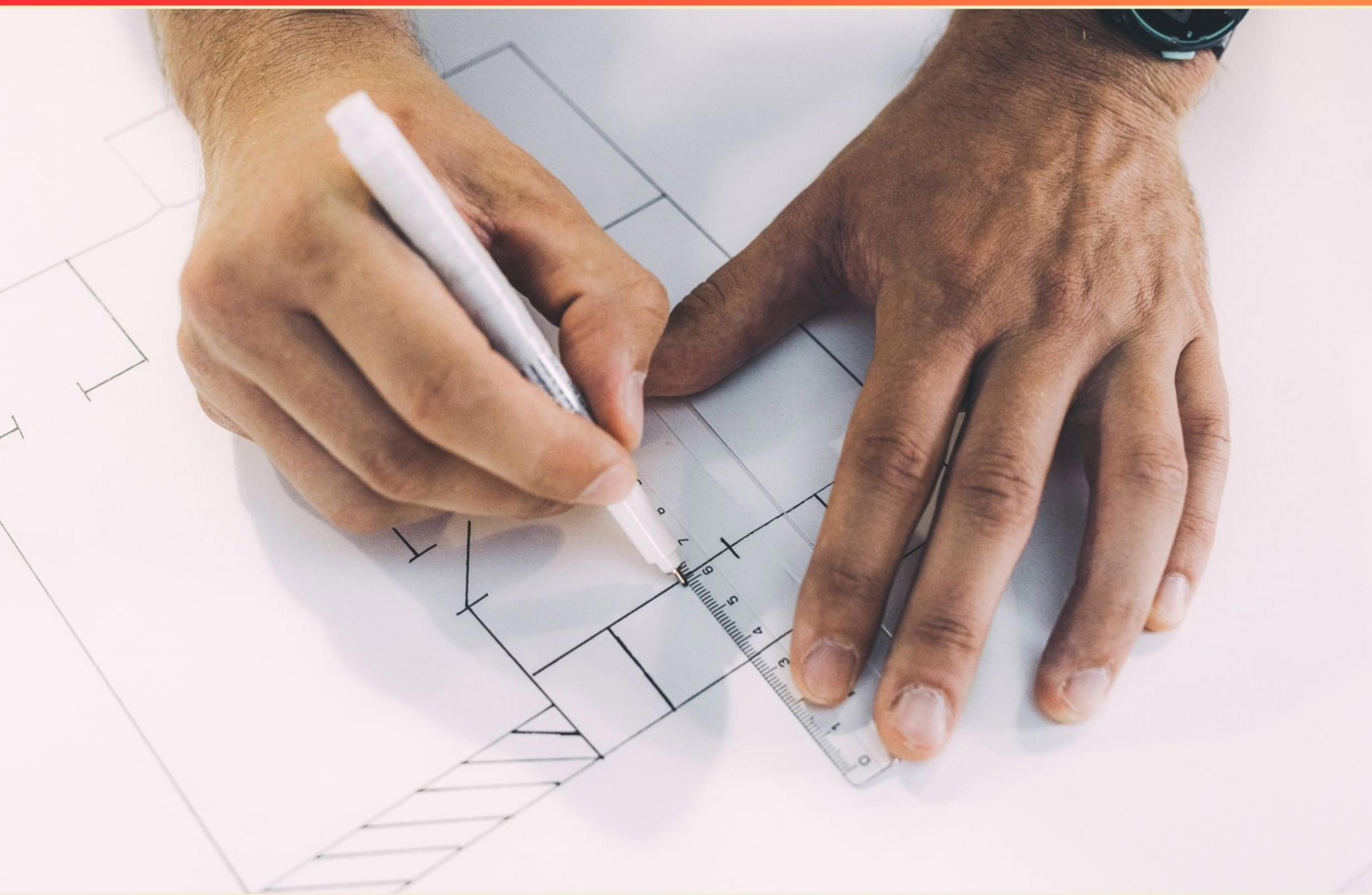
# ETM 1050 DESIGN CONSIDERATIONS FUNDAMENTALS PRACTICE EXAM (SAMPLE)

## STUDY GUIDE



## SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE**

https://etm1050.examzify.com

**Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.**

**ALL RIGHTS RESERVED.**

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

# 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


SAMPLE

# 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.

SAMPLE

# 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!

SAMPLE

# Questions

SAMPLE

**1. What does a Pugh matrix help identify quickly?**

A. The most expensive solution.

B. The quickest marketing plan.

C. A detailed project schedule.

D. The best concept among alternatives.

**2. When should affordability influence design choices?**

A. At the end of the program

B. During production

C. At the very beginning of the program

D. After deployment

**3. What is the purpose of a design parameter tree?**

A. To compile a random list of variables.

B. To organize design variables, tolerances, and relationships to control the design space and enable optimization.

C. To replace the CAD model.

D. To track supplier delivery times.

**4. A supplier's limited knowledge of Design Intent and Application could cause significant problems.**

A. Design Intent; Application

B. Design Intent; Materials

C. Materials; Application

D. Design Intent; Interfaces

**5. GIDEP reports counterfeit item occurrences and tracks trends.**

A. It reports counterfeit item occurrences and tracks trends.

B. It only reports security incidents.

C. It has no relation to supplier quality.

D. It replaces QA testing.

SAMPLE

**6. Which mitigation activity focuses on reporting counterfeit item occurrences in the Government-Industry Data Exchange Program (GIDEP) and monitoring trends?**

A. Auditing

B. Reporting

C. Testing

D. Inspections

**7. What is a Bill of Materials (BOM) and why is it essential in design?**

A. A schedule for manufacturing.

B. A structured list of all materials and components required for a product, enabling procurement, cost estimation, and change management.

C. A report of test results.

D. A summary of safety hazards.

**8. A supplier's limited knowledge of which two aspects of a CSI could cause significant problems?**

A. Cost and Schedule

B. Failure effects and Failure modes

C. Materials and Packaging

D. Testing Procedures

**9. Which factors are assessed to evaluate ergonomic risk in product design?**

A. User posture, reach, force, repetition, and fatigue.

B. Production schedule and cost.

C. Color preference and branding.

D. Weather conditions.

**10. Which statement best describes human factors engineering benefits in product design?**

A. Usability, safety, comfort, and efficiency by considering user capabilities and limitations

B. It only concerns the product's weight

C. It is irrelevant to safety considerations

D. It guarantees zero usability issues

SAMPLE

# Answers

SAMPLE

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

SAMPLE

# Explanations

SAMPLE

## 1. What does a Pugh matrix help identify quickly?

A. The most expensive solution.

B. The quickest marketing plan.

C. A detailed project schedule.

D. The best concept among alternatives.

*A Pugh matrix is a quick, structured way to decide between several design ideas by comparing them across a set of criteria against a baseline concept. You list criteria like performance, feasibility, risk, and ease of implementation, then rate each concept as better, worse, or similar to the baseline (often with optional weights). This produces a clear ranking that highlights which concept performs best overall, helping you spot the strongest trade-offs without getting bogged down in lengthy analysis. It isn't about finding the most expensive option, the fastest marketing plan, or a detailed project schedule—those outcomes aren't what the matrix measures. Instead, it focuses on evaluating concepts to identify the best overall direction to pursue.*

## 2. When should affordability influence design choices?

A. At the end of the program

B. During production

C. At the very beginning of the program

D. After deployment

*Affordability must guide design decisions from the very beginning. When cost targets are set and cost implications are considered upfront, you can shape the architecture, material choices, manufacturing methods, and features to meet the budget without sacrificing essential requirements. Early attention to cost lets you trade off complexity, use standard components, simplify interfaces, and design for producibility and lifecycle maintenance. If affordability is pushed to later stages, costly rework, redesigns, or substitutions become likely, risking delays and budget overruns while forcing compromises that ripple through performance and reliability. By embedding cost considerations at the start, the project stays feasible, schedules stay realistic, and the final product remains aligned with what customers are willing to pay.*

## 3. What is the purpose of a design parameter tree?

A. To compile a random list of variables.

B. To organize design variables, tolerances, and relationships to control the design space and enable optimization.

C. To replace the CAD model.

D. To track supplier delivery times.

*A design parameter tree is a structured map of design variables, tolerances, and the relationships that connect them, shaping how the design can change. It defines the design space by showing which parameters are adjustable, how they interact, and how tolerances and dependencies constrain outcomes. This organization enables systematic optimization, because you can see how tweaking one parameter affects others, identify sensitivities, and enforce constraints to stay within specs. It isn't a random list of variables, it doesn't replace the CAD model, and it isn't used to track supplier delivery times. In short, it coordinates the variables and their links to support controlled exploration and optimization of the design.*

SAMPLE

## 4. A supplier's limited knowledge of Design Intent and Application could cause significant problems.

A. Design Intent; Application

B. Design Intent; Materials

C. Materials; Application

D. Design Intent; Interfaces

*Understanding what the product must achieve (Design Intent) and where and how it will be used (Application) is essential for a supplier to deliver something that actually works. When a supplier doesn't grasp both, they can't align decisions about form, fit, function, tolerances, processes, and capabilities with the real purpose and operating environment. That misalignment can lead to parts that don't perform, fail prematurely, or don't integrate with other components, causing delays and rework. For example, a fastener intended to withstand vibration and high heat in an engine must be selected and machined with those conditions in mind; without knowing the design intent and the application, the supplier might choose the wrong material or tolerances and the assembly could loosen or corrode. Other pairings miss this alignment because they focus on materials or interfaces without tying them to what the product is supposed to do and where it will be used.*

## 5. GIDEP reports counterfeit item occurrences and tracks trends.

A. It reports counterfeit item occurrences and tracks trends.

B. It only reports security incidents.

C. It has no relation to supplier quality.

D. It replaces QA testing.

*GIDEP is used to share information about counterfeit items and other quality issues so programs can avoid defective parts. The statement that it reports counterfeit item occurrences and tracks trends best captures its purpose, because collecting instances and analyzing how they appear over time helps identify risk patterns across suppliers and products, guiding mitigation efforts. This goes beyond simply reporting security incidents, since counterfeit and quality-related data address broader supplier performance and reliability concerns. It is related to supplier quality because the information comes from the supply chain and directly informs decisions about which suppliers and parts are acceptable. It does not replace QA testing; QA testing remains essential, while GIDEP data supports risk assessment and sourcing decisions.*

## 6. Which mitigation activity focuses on reporting counterfeit item occurrences in the Government-Industry Data Exchange Program (GIDEP) and monitoring trends?

A. Auditing

B. Reporting

C. Testing

D. Inspections

*Reporting is the activity described here. In GIDEP, reporting counterfeit item occurrences and monitoring trends is how information about detected issues is shared across government and industry. It builds a data set of incidents, analyzes patterns (such as recurring suppliers, part numbers, or batches), and informs corrective actions, procurement decisions, and risk management. Auditing focuses on verifying compliance and process effectiveness, testing evaluates the physical or functional performance of items, and inspections assess the condition of items or documentation at a point in time. Because the goal is to capture incidents and observe how they evolve over time, reporting fits this purpose best.*

SAMPLE

## 7. What is a Bill of Materials (BOM) and why is it essential in design?

A. A schedule for manufacturing.

B. A structured list of all materials and components required for a product, enabling procurement, cost estimation, and change management.

C. A report of test results.

D. A summary of safety hazards.

*A Bill of Materials is a structured list of every material and component needed to build a product, including quantities, part numbers, units of measure, and often sourcing and cost data. This clarity lets designers, buyers, and engineers plan purchases, estimate costs, and manage changes throughout development and production. By linking each part to the product, the BOM ensures the right items are available when needed, helps avoid shortages or excess inventory, and provides a clear basis for version control when parts are updated or substituted. It also supports manufacturing and procurement systems by guiding sourcing, production routing, and cost tracking, making it possible to implement design changes without losing track of what the product requires. The other options describe schedules, test results, or safety summaries, which are different documents and not what a BOM provides.*

## 8. A supplier's limited knowledge of which two aspects of a CSI could cause significant problems?

A. Cost and Schedule

B. Failure effects and Failure modes

C. Materials and Packaging

D. Testing Procedures

*Understanding how a component can fail and what that failure would do to the system is essential for predicting risk and preventing problems. Knowing failure modes means you can identify all the ways a part might fail, while knowing the corresponding failure effects tells you what that failure would actually do to the equipment, safety, or performance. When a supplier is unfamiliar with these two aspects, hidden failure paths can slip through, leading to unexpected downtime, safety hazards, or costly recalls because there's no clear picture of which failures matter most and how they impact the system. This approach underpins reliable design and effective risk management, guiding what to test, what to monitor, and where to add redundancy or design changes. While cost, schedule, materials, packaging, and testing procedures are important, they don't directly provide the insight into how failures occur and what their real-world consequences would be, which is why knowledge of failure modes and their effects is the strongest predictor of avoiding significant problems.*

SAMPLE

## 9. Which factors are assessed to evaluate ergonomic risk in product design?

A. User posture, reach, force, repetition, and fatigue.

B. Production schedule and cost.

C. Color preference and branding.

D. Weather conditions.

*Ergonomic risk in product design is about how a user physically interacts with the product and what loads that interaction creates on the body. The factors assessed—posture, reach, force, repetition, and fatigue—directly relate to how demanding a task is on muscles, joints, and nerves. Awkward or sustained postures force joints into stressed positions; having to reach too far or into awkward directions increases shoulder and back strain. The amount of force required to operate controls or grip the product determines tissue loading and potential injury risk. Repetitive motions accumulate wear and tear over time, especially when there's little variation or insufficient rest. Fatigue further reduces performance and raises the chance of improper use or overexertion, amplifying the effects of the other factors. By evaluating these elements, designers can make changes like reconfiguring control placement, reducing required force, shortening or varying repetitive tasks, and adding rests or adjustments to keep use within comfortable limits. Other options don't focus on how the body is stressed during use. Production schedule and cost relate to manufacturing efficiency, not user biomechanics. Color preference and branding concern appearance and market fit, not physical strain during use. Weather conditions can affect comfort in some outdoor contexts, but they're not the core factors used to assess ergonomic risk in typical product design.*

## 10. Which statement best describes human factors engineering benefits in product design?

A. Usability, safety, comfort, and efficiency by considering user capabilities and limitations

B. It only concerns the product's weight

C. It is irrelevant to safety considerations

D. It guarantees zero usability issues

*Human factors engineering designs products around how people actually use them, focusing on human abilities, limitations, and behaviors. By considering what users can see, reach, remember, and control, it improves usability, safety, comfort, and efficiency. Designers test with real users, assess cognitive load and physical interactions, and iterate to reduce mistakes, fatigue, and the need for extensive training. This holistic approach explains why usability and safety rise together when a product is tailored to human capabilities, rather than just tweaking a single attribute like weight. It's unrealistic to guarantee zero usability issues, but the overall impact is clearer, safer, and more user-friendly operation.*

SAMPLE

# 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://etm1050.examzify.com

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

SAMPLE