

ENGINEERING MANUFACTURE OCR R109 PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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THE FULL VERSION STUDY GUIDE**

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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.

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. The ability to withstand a force that squeezes it is called which property?**
 - A. Strength
 - B. Tensile Strength
 - C. Compressive Strength
 - D. Hardness
- 2. Which advantage relates to standardised processes?**
 - A. Standardised processes and procedures need no alteration
 - B. Constant retooling
 - C. Customised every product
 - D. Incompatible standards
- 3. Which term refers to the process of hardening a steel and then tempering to adjust toughness?**
 - A. Hardening and tempering
 - B. Heat treatment
 - C. Annealing
 - D. Nitriding
- 4. Which metal does not contain iron, has good corrosion resistance but tarnishes and is non-magnetic?**
 - A. Non-ferrous metal
 - B. Ferrous metal
 - C. Stainless steel
 - D. Alloy
- 5. Which of the following is listed as an advantage of global manufacturing?**
 - A. Cheaper manufacturing costs
 - B. Global supply chain
 - C. Manufacturing near raw materials
 - D. More centralised location for product market

- 6. Which finish involves applying pigment by electrostatic spraying to create a wear-resistant surface layer?**
- A. Powder coating
 - B. Painting
 - C. Plastic coating
 - D. Surface finishing
- 7. Which process rubs a material with fine abrasives to produce a smooth, shiny and glossy finish?**
- A. Polishing
 - B. Linishing
 - C. Buffing
 - D. Grinding
- 8. Direct metal laser sintering (DMLS) is practically the same as SLS but uses metal powder.**
- A. Selective Laser Sintering (SLS)
 - B. Stereolithography (SLA)
 - C. Direct metal laser sintering (DMLS)
 - D. Fusion deposition modelling (FDM)
- 9. Which is a disadvantage related to facility concentration?**
- A. Concentration of facilities hurts environment
 - B. Decentralization improves environment
 - C. Reducing energy costs
 - D. Better air quality
- 10. Which resin is typically used for electrical insulation in plug sockets and handles and is brittle if not reinforced?**
- A. Urea Formaldehyde
 - B. Polyester Resin
 - C. Epoxy Resin
 - D. Phenol Formaldehyde

Answers

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

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Explanations

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1. The ability to withstand a force that squeezes it is called which property?

- A. Strength
- B. Tensile Strength
- C. Compressive Strength
- D. Hardness

Compressive strength is the property that describes how well a material can resist a squeezing or crushing load. Under such a load, the material experiences compressive stress and fails when that stress exceeds its capacity. This differs from tensile strength, which is about resisting pulling apart, and from hardness, which measures resistance to indentation. Concrete, for example, has high compressive strength, making it strong under crushing forces, while steel is renowned for high tensile strength. So, the ability to withstand a force that squeezes it is called compressive strength.

2. Which advantage relates to standardised processes?

- A. Standardised processes and procedures need no alteration
- B. Constant retooling
- C. Customised every product
- D. Incompatible standards

Standardisation creates repeatability and predictability in manufacturing by defining clear steps, instructions, and criteria that apply across all units. When processes and procedures are standardized, tasks are performed the same way each time, so the method can be followed with little need for changes. This leads to easier training, faster onboarding, consistent quality, and less downtime from rework. The advantage described fits because, once a standard method is set, it can be applied without continual alteration, keeping production stable and efficient. The other options describe outcomes that oppose standardisation: frequent retooling wastes time and money; designing every product as bespoke defeats the purpose; and incompatible standards create barriers and inefficiency.

3. Which term refers to the process of hardening a steel and then tempering to adjust toughness?

- A. Hardening and tempering
- B. Heat treatment
- C. Annealing
- D. Nitriding

Hardening and tempering is a heat-treatment sequence used to raise hardness and then tune toughness. In this approach, steel is heated into its austenite range and quenched to form martensite, which makes it very hard but brittle. Tempering then reheats it to a lower temperature to relieve internal stresses and allow some diffusion, reducing hardness slightly and increasing toughness to the desired level. This combination—hardening to gain hardness, then tempering to adjust toughness—is exactly what the term describes. The broader term heat treatment covers many processes, but it doesn't specify this specific sequence. Annealing softens steel, and nitriding hardens the surface without the same tempering step to adjust toughness.

4. Which metal does not contain iron, has good corrosion resistance but tarnishes and is non-magnetic?

A. Non-ferrous metal

B. Ferrous metal

C. Stainless steel

D. Alloy

Non-ferrous metals are metals that do not contain iron. This means they are not attracted to magnets, unlike ferrous metals that contain iron. They also tend to resist corrosion in many environments, which is why materials like aluminum and copper alloys are popular in shipbuilding, electronics, and architectural use. At the same time, many non-ferrous metals can tarnish through surface oxidation or chemical reactions—copper develops a patina, silver tarnishes, and some aluminum surfaces dull with oxide layers. The combination of no iron, non-magnetic behavior, good resistance to deep corrosion, yet potential surface tarnish fits the description, making non-ferrous metal the best match.

5. Which of the following is listed as an advantage of global manufacturing?

A. Cheaper manufacturing costs

B. Global supply chain

C. Manufacturing near raw materials

D. More centralised location for product market

Global manufacturing is driven by lowering production costs across the entire operation. By locating production in regions with cheaper labor, lower material costs, favorable energy prices, and supportive policies, a company can reduce the unit cost of making each product. This cost reduction directly boosts competitiveness and profitability, which is why cheaper manufacturing costs is the best-listed advantage. Other aspects can come into play in a global network—for example, having a broad supply base can improve resilience and sourcing options, but it also adds complexity and risk. Being near raw materials might cut transport for some items, yet total costs aren't guaranteed to be lower if other inputs are expensive or if logistics outweigh the savings. Centralizing production near product markets runs counter to the global approach, which aims to optimize across multiple regions rather than concentrate in one spot.

6. Which finish involves applying pigment by electrostatic spraying to create a wear-resistant surface layer?

A. Powder coating

B. Painting

C. Plastic coating

D. Surface finishing

Powder coating is the finish that uses dry pigment mixed with resin and applies it to a surface by electrostatic spraying. The charged powder is attracted to the grounded part, yielding a uniform coating even on complex shapes. After application, the part is heated so the powder melts, flows, and cures into a solid, wear-resistant film. This creates a durable surface that resists abrasion and corrosion, with minimal or no solvent usage. Painting, by comparison, uses liquid coatings that can run or require more extensive surface preparation and may not achieve the same level of wear resistance. Plastic coating is a broader label for various coating types, not specifically the electrostatic powder process. Surface finishing is a general term for finishing steps, not a specific method. So the method described—applying pigment by electrostatic spraying and curing to form a tough, durable layer—fits powder coating.

7. Which process rubs a material with fine abrasives to produce a smooth, shiny and glossy finish?

- A. Polishing**
- B. Linishing
- C. Buffing
- D. Grinding

Finishing a surface to a smooth, glossy look by rubbing with very fine abrasive particles is polishing. This process removes the tiniest surface scratches and imperfections, using progressively finer grit until the surface achieves a mirror-like shine. Linishing uses coarser abrasives to level the surface, producing a smooth but not highly reflective finish. Buffing can also yield high gloss, but it relies on a polishing compound on a soft wheel rather than the fine abrasive steps that define polishing. Grinding uses a coarse wheel to remove material quickly and leaves a rougher surface rather than a glossy finish. So the description best matches polishing.

8. Direct metal laser sintering (DMLS) is practically the same as SLS but uses metal powder.

- A. Selective Laser Sintering (SLS)
- B. Stereolithography (SLA)
- C. Direct metal laser sintering (DMLS)**
- D. Fusion deposition modelling (FDM)

Direct metal laser sintering is the metal-powder version of the laser sintering idea. The same basic approach is used—build parts layer by layer by selectively fusing powder with a laser—but the material is metal instead of plastic. This gives metal parts with different mechanical properties and typically requires post-processing like heat treatment. The other options describe different processes: Selective Laser Sintering uses polymer powders, stereolithography uses a liquid resin cured by light, and fused deposition modelling extrudes thermoplastic filament rather than sintering powder with a laser. So the description matches Direct metal laser sintering.

9. Which is a disadvantage related to facility concentration?

- A. Concentration of facilities hurts environment**
- B. Decentralization improves environment
- C. Reducing energy costs
- D. Better air quality

Concentrating facilities in one area increases the local environmental burden. When many operations are clustered, the combined emissions, heat, noise, and waste fall on a smaller geographic area, raising pollution levels in the surrounding air and water, straining local infrastructure, and heightening the risk and impact of accidents. That localized pressure is the main downside of facility concentration. Choices that mention decentralization, lower energy costs, or better air quality describe potential benefits or outcomes, not the disadvantage of concentrating facilities.

10. Which resin is typically used for electrical insulation in plug sockets and handles and is brittle if not reinforced?

A. Urea Formaldehyde

B. Polyester Resin

C. Epoxy Resin

D. Phenol Formaldehyde

Resin choice for electrical insulation hinges on balancing insulation performance with mechanical toughness. For plug sockets and handles, you want a material that insulates well and withstands heat, yet can be made strong enough to resist impact and handling. Phenol-formaldehyde resin, historically known as Bakelite, fits this need well: it forms a very hard, excellent electrical insulator with good heat resistance. However, its intrinsic rigidity makes it brittle unless you reinforce it with fibers or fillers. That reinforcement is what gives practical plug housings and handles the toughness they require, while still preserving insulation and heat performance. Urea-formaldehyde tends to have lower heat resistance and can be moisture-sensitive, making it less suitable for hot electrical parts. Polyester resin isn't as good an electrical insulator at these temperatures, and epoxy resin, while tough and insulating, isn't the classic material chosen for brittle, reinforced plug housings in the traditional sense. The description points to the reinforced brittle nature of phenol-formaldehyde rather than the other resins.

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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://engrmanufactureocrr109.examzify.com>

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

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