

Certificate of Qualification (C of Q) 310T Truck and Coach Technician - Engine Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

This is a sample study guide. To access the full version with hundreds of questions,

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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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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. What is a potential result of a high crankcase oil level?**
 - A. Lube oil aeration**
 - B. Oil pressure gauge fluctuations**
 - C. Friction bearing damage**
 - D. All of the above**

- 2. What safety measure should be followed when working on an engine?**
 - A. Always wear gloves and safety goggles.**
 - B. Always disconnect the battery and ensure the engine is cool.**
 - C. Always work with the engine running.**
 - D. Always allow the engine to warm up before servicing.**

- 3. What symptoms may indicate an issue with the alternator?**
 - A. Dimming lights**
 - B. Overheating engine**
 - C. Low oil pressure**
 - D. Excessive exhaust smoke**

- 4. The cooling system hoses on an engine collapse when the unit is left parked overnight. What is the likely cause?**
 - A. This is normal.**
 - B. A defective thermostat.**
 - C. Improper coolant.**
 - D. A defective radiator cap.**

- 5. How can you identify fuel contamination in engine oil?**
 - A. By checking for excessive oil pressure.**
 - B. By a strong fuel odor or abnormal oil viscosity.**
 - C. By observing a decrease in oil temperature.**
 - D. By the color of the engine coolant.**

6. Which of the following is true of a CFA piston?

- A. The ring belt reinforcement insert extends up into the leading edge of the piston.**
- B. It is a type of Ni-Resist insert.**
- C. It is used only on articulating pistons.**
- D. The ring belt operates at higher temperatures.**

7. How does a diesel engine differ from a gasoline engine regarding ignition?

- A. Diesel engines use spark ignition**
- B. Gasoline engines rely on compression ignition**
- C. Diesel engines rely on compression ignition**
- D. Gasoline engines require diesel fuel**

8. When comparing brake power measured at the flywheel with that at the drive wheels, what is generally true?

- A. No difference if the transmission is functioning properly.**
- B. Power at the wheels exceeds that at the flywheel by 10% to 25%.**
- C. Power can only be measured at the drive wheels.**
- D. Power at the flywheel exceeds that at the drive wheels by 20% to 25%.**

9. What are throw-out bearings used for in a diesel engine?

- A. To enhance fuel delivery**
- B. To facilitate clutch disengagement**
- C. To improve throttle response**
- D. To maintain exhaust pressure**

10. A typical maximum specified inlet restriction for an air filter on a turbocharged diesel would be?

- A. 25 inches H₂O restriction**
- B. 25 inches Hg (mercury) restriction**
- C. 25 psi**
- D. 25 kPa**

Answers

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

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Explanations

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1. What is a potential result of a high crankcase oil level?

- A. Lube oil aeration
- B. Oil pressure gauge fluctuations
- C. Friction bearing damage
- D. All of the above**

A high crankcase oil level can lead to several issues within an engine, which is why the chosen answer encompasses multiple potential problems. When oil levels rise too high in the crankcase, it can create lube oil aeration. This occurs because the crankshaft can churn the excess oil, causing it to froth and foam. Aerated oil loses its ability to lubricate effectively, which might lead to increased wear on engine components. Moreover, a high oil level can cause fluctuations in the oil pressure gauge. This is due to the excess oil potentially disrupting the normal flow and return of the oil within the lubrication system, causing erratic readings and making it difficult to accurately assess the engine's lubrication status. Lastly, excessive oil can contribute to damage to friction bearings. When oil is aerated, it no longer provides a consistent lubricating film, which can lead to metal-to-metal contact in the bearings. This contact generates heat and can cause premature wear or even catastrophic failure of these critical components. Overall, the correct answer highlights the interconnected nature of these issues, all of which can stem from a high crankcase oil level.

2. What safety measure should be followed when working on an engine?

- A. Always wear gloves and safety goggles.
- B. Always disconnect the battery and ensure the engine is cool.**
- C. Always work with the engine running.
- D. Always allow the engine to warm up before servicing.

When working on an engine, disconnecting the battery and ensuring the engine is cool are critical safety measures that help prevent accidents and injuries. Disconnecting the battery reduces the risk of electrical shock and prevents accidental engine starts while maintenance or repairs are being performed. If the engine is still hot, there's an increased risk of burns or injuries from hot surfaces, as well as potential hazards from fluids that may leak or become pressurized. These precautions create a safer working environment by mitigating the risks associated with electrical components and engine heat. Ensuring that the vehicle is in a safe state before beginning work is a fundamental practice for any technician. By following these steps, a technician can significantly reduce the likelihood of accidents and ensure a safer repair process.

3. What symptoms may indicate an issue with the alternator?

- A. Dimming lights**
- B. Overheating engine**
- C. Low oil pressure**
- D. Excessive exhaust smoke**

Dimming lights can be a clear symptom of an alternator issue. The alternator is responsible for generating electricity while the engine is running and charging the vehicle's battery. If the alternator begins to fail, it may not produce enough voltage to power electrical components effectively, leading to symptoms like dimming or flickering lights. This occurs because the electrical system is not getting the full charge needed to maintain brightness, particularly when other electrical loads are active, such as the radio or climate control system. In contrast, the other symptoms listed traditionally point to different vehicle issues. For example, overheating engines are more typically associated with cooling system failures, such as coolant leaks or a malfunctioning water pump. Low oil pressure usually indicates issues with the engine lubrication system, which might be due to insufficient oil or a failing oil pump. Excessive exhaust smoke often points to combustion problems or engine wear, such as worn piston rings or valve seals. Understanding these distinctions can help technicians diagnose the root cause of vehicle problems more effectively.

4. The cooling system hoses on an engine collapse when the unit is left parked overnight. What is the likely cause?

- A. This is normal.**
- B. A defective thermostat.**
- C. Improper coolant.**
- D. A defective radiator cap.**

The situation described, where cooling system hoses collapse when left parked overnight, is likely caused by a defective radiator cap. The radiator cap plays a crucial role in maintaining the proper pressure within the cooling system. When the engine cools down, if the radiator cap is faulty, it may not maintain the correct vacuum pressure. As the engine cools, the pressure inside the cooling system decreases, resulting in a vacuum that can cause the hoses to collapse. If the radiator cap fails to provide an adequate seal or regulate pressure, it allows air to enter the cooling system, which can exacerbate the collapse of hoses due to this vacuum effect. Properly functioning caps create a pressurized environment during operation and allow the system to manage changes in temperature effectively when the engine cools. The other choices do not lead to hose collapse in the same consistent manner. A defective thermostat would typically lead to overheating or underheating, while improper coolant might affect the system's efficiency but wouldn't cause hoses to collapse. Normal behavior would not entail hose collapse; thus, the condition described is not typical and suggests an issue specifically with the radiator cap.

5. How can you identify fuel contamination in engine oil?

- A. By checking for excessive oil pressure.
- B. By a strong fuel odor or abnormal oil viscosity.**
- C. By observing a decrease in oil temperature.
- D. By the color of the engine coolant.

Identifying fuel contamination in engine oil can be effectively done by recognizing a strong fuel odor or noting abnormal oil viscosity. When fuel contaminates the oil, it can significantly alter the oil's characteristics. The presence of fuel can lead to a noticeable odor and can thin the oil, resulting in decreased viscosity. This reduced viscosity might affect the oil's ability to lubricate and protect engine components efficiently, leading to increased wear or potential engine damage if not addressed. The other options do not accurately indicate fuel contamination. Excessive oil pressure typically points to issues like oil flow restrictions or a malfunctioning oil pressure relief valve rather than fuel presence. A decrease in oil temperature can result from various factors like a malfunctioning thermostat or cooling system issues, but it does not relate directly to fuel contamination. Finally, the color of the engine coolant is more relevant to potential coolant leaks or other cooling system issues, not fuel contamination in engine oil. Thus, the strongest indicators of fuel in the oil are the distinct fuel odor and changes in oil viscosity.

6. Which of the following is true of a CFA piston?

- A. The ring belt reinforcement insert extends up into the leading edge of the piston.
- B. It is a type of Ni-Resist insert.
- C. It is used only on articulating pistons.
- D. The ring belt operates at higher temperatures.**

The statement about the ring belt operating at higher temperatures is accurate because CFA (Continuous Fiber Aluminum) pistons are designed to withstand extreme conditions, including high temperatures, which are common in many engine applications. The materials and engineering that go into creating these pistons allow them to maintain structural integrity and functionality even when exposed to the elevated heat generated during engine operation. This characteristic is essential for ensuring performance and longevity in high-performance and heavy-duty applications where such operating conditions are prevalent. Understanding the properties of CFA pistons, particularly their ability to handle higher temperatures without failure, helps technicians in choosing the right components for specific engine designs, thereby enhancing reliability and efficiency.

7. How does a diesel engine differ from a gasoline engine regarding ignition?

- A. Diesel engines use spark ignition**
- B. Gasoline engines rely on compression ignition**
- C. Diesel engines rely on compression ignition**
- D. Gasoline engines require diesel fuel**

A diesel engine operates using the principle of compression ignition. In this process, air is compressed to a high degree, resulting in a significant increase in temperature. Once the air is sufficiently heated, fuel is injected into the combustion chamber. The high temperature of the compressed air ignites the diesel fuel without the need for a spark plug. This method of ignition differentiates diesel engines from gasoline engines, which primarily use spark ignition. In gasoline engines, the air-fuel mixture is compressed to a lower extent than in diesel engines and requires a spark from a spark plug to ignite the fuel. Understanding this distinction is crucial for diagnosing issues and servicing diesel engines effectively. It highlights the different combustion processes and fuel types used in these engines, which ultimately impact their operation, efficiency, and maintenance requirements.

8. When comparing brake power measured at the flywheel with that at the drive wheels, what is generally true?

- A. No difference if the transmission is functioning properly.**
- B. Power at the wheels exceeds that at the flywheel by 10% to 25%.**
- C. Power can only be measured at the drive wheels.**
- D. Power at the flywheel exceeds that at the drive wheels by 20% to 25%.**

When comparing brake power measured at the flywheel with that at the drive wheels, it is accurate that the power at the flywheel typically exceeds that at the drive wheels by a margin of about 20% to 25%. This difference arises primarily due to the losses that occur in the drivetrain, which includes components like the transmission, differential, and other related parts. These components consume some of the power generated by the engine as they convert rotational energy into motion, resulting in a reduction in the amount of power that ultimately reaches the ground at the drive wheels. Factors such as friction within engine parts, inefficiencies in the transmission, and energy loss in the differential contribute to this reduction. Therefore, the measurement of power directly at the flywheel is higher compared to what is measured at the wheels, reflecting the real-world performance of the vehicle. Understanding this principle is key in evaluating vehicle performance and making necessary adjustments or repairs to improve efficiency.

9. What are throw-out bearings used for in a diesel engine?

- A. To enhance fuel delivery
- B. To facilitate clutch disengagement**
- C. To improve throttle response
- D. To maintain exhaust pressure

Throw-out bearings are essential components in the clutch assembly of a diesel engine, specifically designed to facilitate clutch disengagement. When the driver presses the clutch pedal, the throw-out bearing engages with the clutch fork, which in turn pushes against the pressure plate of the clutch assembly. This action releases the tension on the clutch disc, allowing it to disengage from the flywheel. This process is critical for smooth gear changes, preventing damage to the gearbox and ensuring that power can be readily transferred between the engine and the drivetrain when required. The effectiveness of clutch disengagement, enabled by the throw-out bearing, is vital for the overall performance and operability of the vehicle. In contrast, the other choices pertain to functionalities that are not related to the throw-out bearing's role in the clutch system.

10. A typical maximum specified inlet restriction for an air filter on a turbocharged diesel would be?

- A. 25 inches H₂O restriction**
- B. 25 inches Hg (mercury) restriction
- C. 25 psi
- D. 25 kPa

The maximum specified inlet restriction for an air filter on a turbocharged diesel engine is typically measured in inches of water column (H₂O) because this unit is appropriate for evaluating airflow resistance in ventilated systems. In the context of air filters, maintaining a specific level of restriction is crucial to ensuring that the engine receives sufficient airflow for optimal combustion while minimizing contaminants entering the intake system. Air filters are designed to trap particulates, but as they capture dirt and debris, a restriction builds up, which can impede airflow. A restriction of 25 inches of H₂O indicates the maximum amount of resistance that the air filter can tolerate before airflow becomes insufficient or negatively impacts engine performance. Beyond this threshold, the engine may experience reduced power, increased fuel consumption, and potentially harmful conditions due to inadequate airflow. Other units presented, such as inches of mercury (Hg), psi, and kilopascals (kPa), are not typically used for measuring air filter restriction in diesel applications. While they may measure pressure in different contexts, they do not reflect the specific resistance characteristics of air filters as effectively as inches of water column does. This makes the specified maximum restriction of 25 inches H₂O the correct answer for assessing the performance limitations of an air filter on

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://cofqtruckengine.examzify.com>

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

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