

310T Truck and Coach Technician Certification Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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

- 1. What is the procedure for pressure testing an open center dump box hydraulic system with a relief valve setting of 24 MPa (3,500 psi)?**
 - A. Install a 35 MPa (5,000 psi) gauge, run engine at high idle and lift the box.**
 - B. Install a 50 MPa (7,500 psi) gauge, run engine at low idle and lift the box.**
 - C. Install a 75 MPa (10,000 psi) gauge, run engine at low idle and stall the box cylinder.**
 - D. Install a 75 MPa (10,000 psi) gauge, run engine at high idle and stall the box cylinder.**
- 2. What effect does the failure to maintain correct drive belt tension have on an engine?**
 - A. Increased fuel efficiency.**
 - B. Reduced engine noise.**
 - C. Increased wear on components.**
 - D. Improved cooling performance.**
- 3. What would be indicated if a multi-staged dump box cylinder does not lift in sequence?**
 - A. Excessive load.**
 - B. Low pump volume.**
 - C. A leaking cylinder seal.**
 - D. A low relief valve setting.**
- 4. What could indicate that a battery is continuously showing signs of moisture near the vent caps?**
 - A. Overfilling of the cells.**
 - B. Voltage regulator set too high.**
 - C. Open stator winding in the alternator.**
 - D. Dirty connections at the battery terminals.**
- 5. What should be measured after installing an exhaust brake?**
 - A. Adjust the intake and exhaust valves.**
 - B. Measure the exhaust system temperature.**
 - C. Measure exhaust backpressure before the brake housing.**
 - D. Measure exhaust backpressure after the brake housing.**

- 6. What should be done if the tooth pattern of a hypoid gear set shows excessive face contact?**
- A. Move the pinion in.**
 - B. Move the pinion out.**
 - C. Move the ring gear closer to the pinion.**
 - D. Move the ring gear away from the pinion.**
- 7. What is done when changing a leaking heater control valve?**
- A. Drain the coolant.**
 - B. Close the valve to prevent coolant leakage.**
 - C. Bring the system to operating temperature.**
 - D. Put the system in a vacuum to prevent coolant leakage.**
- 8. What can be the effect of low coolant levels in an engine?**
- A. Increased fuel efficiency.**
 - B. Overheating of the engine.**
 - C. Improved performance.**
 - D. Better engine lubrication.**
- 9. Which procedure will allow you to safely disassemble a traction controlled differential assembly?**
- A. Mark the case halves for orientation.**
 - B. Lift the carrier with an approved sling.**
 - C. Cage the case halves before removing the bolts.**
 - D. Remove the ring gear before separating the case halves.**
- 10. What would cause air to be visible in the sight glass?**
- A. Incorrect refrigerant oil.**
 - B. Excessive refrigerant oil.**
 - C. Incorrect refrigerant in the system.**
 - D. Insufficient refrigerant in the system.**

Answers

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

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Explanations

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1. What is the procedure for pressure testing an open center dump box hydraulic system with a relief valve setting of 24 MPa (3,500 psi)?

A. Install a 35 MPa (5,000 psi) gauge, run engine at high idle and lift the box.

B. Install a 50 MPa (7,500 psi) gauge, run engine at low idle and lift the box.

C. Install a 75 MPa (10,000 psi) gauge, run engine at low idle and stall the box cylinder.

D. Install a 75 MPa (10,000 psi) gauge, run engine at high idle and stall the box cylinder.

When pressure testing an open center dump box hydraulic system, it is crucial to understand the system's operational parameters and the purpose of using a pressure gauge. The correct procedure involves utilizing a gauge that exceeds the system's relief valve setting to ensure that the entire hydraulic system can be accurately tested without risking damage. In this scenario, the relief valve is set to 24 MPa (3,500 psi). By installing a 75 MPa (10,000 psi) gauge, you have a safety margin that allows for accurate readings while also accommodating potential spikes in pressure that could occur during tests, especially when stalling the box cylinder. Running the engine at high idle is essential because hydraulic systems rely on sufficient flow and pressure to function optimally. At high idle, the system produces more hydraulic fluid flow, allowing for a thorough pressure test. Stalling the box cylinder engages the hydraulic system to operate under maximum load, which is critical for determining if it can handle the required pressure without exceeding the relief valve limit. This tests the integrity and performance of the system effectively. The use of a high-capacity gauge and the stall test under high engine speed ensures that any potential weaknesses or malfunctions in the hydraulic system can be identified while remaining well within the operational limits.

2. What effect does the failure to maintain correct drive belt tension have on an engine?

A. Increased fuel efficiency.

B. Reduced engine noise.

C. Increased wear on components.

D. Improved cooling performance.

The failure to maintain correct drive belt tension primarily leads to increased wear on components. When the drive belt is not properly tensioned, it can lead to slippage, excessive vibration, or misalignment of the belt system. This improper functioning can cause various components that the belt drives, such as the alternator, power steering pump, and water pump, to operate inefficiently or fail prematurely. Over time, the increased friction and wear from these issues can lead to damage not just to the drive belt itself, but also to the driven components. For example, if the water pump is not turning at the correct speed, it can lead to engine overheating, while inadequate charging system performance from an improperly driven alternator may result in battery depletion. Therefore, maintaining the correct tension on the drive belt is crucial for the longevity and efficient operation of the engine's accessories and overall system reliability.

3. What would be indicated if a multi-staged dump box cylinder does not lift in sequence?

- A. Excessive load.**
- B. Low pump volume.**
- C. A leaking cylinder seal.**
- D. A low relief valve setting.**

When a multi-staged dump box cylinder does not lift in sequence, it typically indicates that there is an issue with the hydraulic system affecting the ability of the cylinder to generate adequate force. A leaking cylinder seal is particularly relevant in this situation because it can lead to a loss of hydraulic fluid pressure within the stages of the cylinder. If the seal is compromised, hydraulic fluid may bypass the seal, preventing the cylinder from building the necessary pressure to lift all stages in order. In a well-functioning hydraulic system, the pressure generated by the hydraulic pump should push the cylinder's stages upward in a coordinated manner. When the seal is leaking, the pressure can drop, leading to a failure in the sequential lifting of the stages. Each stage of the cylinder relies on a specific amount of pressure to operate, and any loss due to a leak can directly impact the performance. Recognizing a leaking cylinder seal as the cause of the issue allows for targeted investigation and repair, ensuring that the dump box functions as intended and operates efficiently. Such knowledge is critical for technicians in maintaining and troubleshooting hydraulic systems effectively.

4. What could indicate that a battery is continuously showing signs of moisture near the vent caps?

- A. Overfilling of the cells.**
- B. Voltage regulator set too high.**
- C. Open stator winding in the alternator.**
- D. Dirty connections at the battery terminals.**

The presence of moisture near the vent caps of a battery can signify an issue related to excessive charging voltage. When the voltage regulator is set too high, it causes overcharging of the battery. This overcharging leads to the electrolyte solution inside the battery boiling over, which results in moisture formation and sometimes corrosion around the battery terminals and vent caps. In contrast, overfilling of the cells typically does not result in moisture accumulation at the vent caps, as it's more aligned with the battery leaking electrolyte. An open stator winding in the alternator would lead to a lack of charging, which generally would not cause moisture buildup. Dirty connections at the battery terminals can lead to poor electrical contact and potential heating, but they would not directly cause moisture to accumulate near the vent caps like overcharging would. Understanding this relationship is vital for diagnosing battery issues and ensuring that the vehicle's electrical system operates correctly to prevent premature battery failure or operational disruptions.

5. What should be measured after installing an exhaust brake?
- A. Adjust the intake and exhaust valves.
 - B. Measure the exhaust system temperature.
 - C. Measure exhaust backpressure before the brake housing.
 - D. Measure exhaust backpressure after the brake housing.**

After installing an exhaust brake, it is crucial to measure the exhaust backpressure after the brake housing. This measurement is important because it helps evaluate how effectively the exhaust brake is functioning. The backpressure created by the exhaust brake can affect engine performance and efficiency. By measuring it after the brake housing, you can assess the brake's impact on the exhaust flow and ensure that it is operating within the designed parameters. If the backpressure is too high, it may indicate a blockage or inefficiency in the exhaust system, which could lead to performance issues or engine damage over time. This measurement allows technicians to confirm that the exhaust brake is doing its job without causing excessive strain on the engine. The other options focus on aspects that are not directly reflective of the exhaust brake's effectiveness after installation, making them less relevant in this context. Adjusting the intake and exhaust valves is typically part of routine engine maintenance, while measuring temperatures and backpressure before the brake housing do not provide the necessary information about the brake's performance.

6. What should be done if the tooth pattern of a hypoid gear set shows excessive face contact?
- A. Move the pinion in.**
 - B. Move the pinion out.
 - C. Move the ring gear closer to the pinion.
 - D. Move the ring gear away from the pinion.

In a hypoid gear set, the tooth pattern reflects how well the gears are meshing with each other. When the tooth pattern indicates excessive face contact, it suggests that the pinion is sitting too far out in relation to the ring gear, causing too much of the tooth face to engage. This can lead to increased wear and the risk of failure. To correct this misalignment, moving the pinion in (or adjusting it closer to the ring gear) reduces the face contact and helps distribute the load more evenly across the tooth surface. This adjustment ensures that the contact pattern falls within the optimal range, which helps in enhancing gear performance, longevity, and overall effectiveness of the drivetrain. Choosing to move the pinion out would only exacerbate the issue, as it would increase the contact area, potentially leading to more significant wear. Similarly, adjusting the ring gear closer to the pinion or further away wouldn't directly address the problem of excessive face contact on the pinion itself. Therefore, moving the pinion in is the most effective corrective action in this situation.

7. What is done when changing a leaking heater control valve?

A. Drain the coolant.

B. Close the valve to prevent coolant leakage.

C. Bring the system to operating temperature.

D. Put the system in a vacuum to prevent coolant leakage.

When changing a leaking heater control valve, draining the coolant is the necessary first step. This action is crucial because the heater control valve is part of the engine's cooling system, and coolant circulates through it. If the coolant isn't drained, it will spill out when the valve is removed, causing a mess as well as a potential safety hazard due to hot coolant. Draining the coolant not only prevents leaks during the valve replacement but also allows for a cleaner and more manageable work environment. It is also essential to avoid contamination of the new valve and surrounding components by old, used coolant. After draining, the old valve can safely be removed and replaced with the new one, allowing for a proper assembly and re-filling of the system with coolant afterwards. Other options, such as closing the valve or bringing the system to operating temperature, do not address the need to stop coolant from leaking during the replacement process. Putting the system in a vacuum is typically used for certain automotive processes, like evacuating air from the system or filling with coolant without introducing air, but it does not prevent leakage during the valve change.

8. What can be the effect of low coolant levels in an engine?

A. Increased fuel efficiency.

B. Overheating of the engine.

C. Improved performance.

D. Better engine lubrication.

Low coolant levels in an engine can lead to overheating because the primary function of coolant is to absorb heat from the engine and dissipate it through the radiator. Coolant circulates through the engine, drawing heat away from critical components, and if the levels are low, there is insufficient fluid available to perform this heat exchange effectively. As a result, the engine may reach temperatures that exceed safe operational limits. When an engine overheats, it can cause significant damage, including warped cylinder heads, blown head gaskets, and other serious mechanical failures. It is crucial to maintain the proper coolant level to ensure the engine operates within its temperature range, thereby protecting it from damage and ensuring longevity.

9. Which procedure will allow you to safely disassemble a traction controlled differential assembly?

- A. Mark the case halves for orientation.**
- B. Lift the carrier with an approved sling.**
- C. Cage the case halves before removing the bolts.**
- D. Remove the ring gear before separating the case halves.**

Caging the case halves before removing the bolts is critical for safely disassembling a traction-controlled differential assembly. This procedure involves placing a device or mechanism, often in the form of clamps or specific fixtures, to hold the case halves together and maintain their alignment during the disassembly process. This is important because differential assemblies can be under tension or load, and properly caging them ensures that components don't shift unexpectedly, which could lead to injury or damage to the parts involved. By caging the case halves, you minimize the risk of the internal components, such as gears and clutch packs, being subjected to undue stress or misalignment when you remove the bolts. It also helps to maintain the integrity of the assembly parameters, making reassembly simpler and ensuring that the differential functions as intended after it is put back together. In contrast, marking the case halves for orientation assists with reassembly but does not provide any physical stability or safety during disassembly. Lifting the carrier with an approved sling is essential for safety when moving heavy components but does not directly relate to the disassembly process itself. While removing the ring gear might seem logical, it is often part of the disassembly process performed after destabilizing the case halves, and doing this first potentially complicates safe

10. What would cause air to be visible in the sight glass?

- A. Incorrect refrigerant oil.**
- B. Excessive refrigerant oil.**
- C. Incorrect refrigerant in the system.**
- D. Insufficient refrigerant in the system.**

When air is visible in the sight glass of a refrigerant system, it typically indicates that there is insufficient refrigerant in the system. This is because a low refrigerant level can create a scenario where air and vapor enter the system, leading to the presence of air in the sight glass. The sight glass is designed to show the state of the refrigerant, whether it's liquid or vapor, and when there isn't enough refrigerant present, the system doesn't operate effectively. In the context of refrigerant performance, having adequate refrigerant is crucial for maintaining the proper pressure and temperature, ensuring that the system can effectively absorb and release heat. Insufficient refrigerant can lead to poor cooling performance and may ultimately damage the components of the air conditioning system if not addressed. Thus, the visibility of air in the sight glass serves as a warning sign that requires attention to the refrigerant levels in the system to ensure efficient operation.

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://310truckcoachtechnician.examzify.com>

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