CUMMINS DIESEL ENGINE SCHOOL PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED 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.

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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!

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Questions

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1. What type of vibration damper is used on the 6BTA5.9M?

A. Elastomer damper

B. Viscous damper

C. Magnetic damper

D. Torsional damper

2. What is the purpose of the neutral safety switch?

A. Prevents engine from starting when the transmission is in gear.

B. Ensures the engine stops automatically if the oil pressure drops.

C. Disables fuel pump when the engine is hot.

D. Engages four-wheel drive when the vehicle is in motion.

3. The neutral safety switch is part of which general system?

A. Fuel system.

B. Exhaust system.

C. Ignition system.

D. Starting interlock system.

4. What three metals make up the main bearing shells?

A. Lead, Tin, Aluminum

B. Lead, Gold-66, Aluminum

C. Tin, Copper, Lead

D. Aluminum, Iron, Lead

5. Which component supplies timed pulses to each injector in an inline pump?

A. A rotary distributor pump uses multiple plungers

B. A rotary distributor pump provides a single high-pressure delivery to each injector

C. An inline pump has multiple plungers delivering timed pulses to each injector

D. Inline pump stores energy in springs to assist injection

6. What type of vibration dampener is used on low horsepower engines?

A. Metal and rubber

B. Viscous

C. Hydraulic

D. Solid state

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7. The gear train is located in which general area of the engine?

A. Rear of the engine

B. Top of the engine

C. Bottom of the engine

D. Front of the engine

8. Regular coolant maintenance primarily ensures which outcome?

A. It reduces noise from the radiator fan

B. It increases fuel octane

C. It prevents corrosion and lubricates water pump and passages, prolonging component life

D. It eliminates the need for antifreeze

9. In manual transmissions, which component often serves a similar safety function by preventing starting unless the clutch is engaged?

A. Brake light switch.

B. Ignition switch.

C. Clutch safety switch.

D. Parking brake interlock.

10. What is the purpose of an engine coolant temperature sensor?

A. Provides temperature data to the ECU to adjust fuel, timing, and emissions; monitors engine operating temperature

B. Measures oil pressure

C. Controls turbo boost

D. Measures ambient air temperature

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Answers

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

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Explanations

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1. What type of vibration damper is used on the 6BTA5.9M?

A. Elastomer damper

B. Viscous damper

C. Magnetic damper

D. Torsional damper

Crankshaft vibration damping smooths the torque pulses produced by the engine's firing sequence. For the 6BTA5.9M, a viscous damper is used on the crankshaft. It works by shearing a viscous fluid between rotating and stationary parts, turning vibration energy into heat and damping the torsional oscillations across a wide range of speeds. This type handles the large, rapid torque fluctuations of a heavy duty diesel and maintains stable damping even as temperature and oil conditions vary. Elastomer dampers rely on rubber, which can age, crack, or degrade with heat and oil exposure, reducing effectiveness over time. Magnetic dampers, using eddy currents, aren't practical for crankshafts due to limited damping capacity and complexity. While all these devices aim to reduce torsional vibrations, the viscous damper is chosen here for its durability and broad-band damping performance.

2. What is the purpose of the neutral safety switch?

A. Prevents engine from starting when the transmission is in gear.

B. Ensures the engine stops automatically if the oil pressure drops.

C. Disables fuel pump when the engine is hot.

D. Engages four-wheel drive when the vehicle is in motion.

A neutral safety switch is an electrical safety interlock in the starting circuit. It allows the engine to crank only when the transmission is in Park or Neutral, preventing the engine from starting in gear and potentially causing the vehicle to lurch or move unexpectedly. This is why the option describing starting the engine only in Park or Neutral is the correct idea. The other statements refer to different systems—oil pressure safety, fuel pump control, or four-wheel-drive engagement—which are not what the neutral safety switch governs.

3. The neutral safety switch is part of which general system?

A. Fuel system.

B. Exhaust system.

C. Ignition system.

D. Starting interlock system.

The neutral safety switch belongs to the starting interlock system. Its job is to prevent the engine from cranking unless the transmission is in Park or Neutral, so the vehicle won't lurch when you start it. It sits in the starter circuit and only allows current to flow to the starter solenoid when the transmission position is safe. If the transmission is in gear, the switch opens the circuit and the starter won't engage. This is about safely enabling starting, not about delivering ignition energy or managing fuel or exhaust. The fuel system delivers fuel, the exhaust system handles exhaust flow, and the ignition system provides spark once the engine is cranking or running; none of those govern the safety condition for starting like the starting interlock does.

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4. What three metals make up the main bearing shells?

A. Lead, Tin, Aluminum

B. Lead, Gold-66, Aluminum

C. Tin, Copper, Lead

D. Aluminum, Iron, Lead

Main bearing shells in heavy-duty diesel engines use a tri-metal construction: a soft, conformable bearing surface, a tough backing, and a third alloy that boosts wear resistance. Lead is chosen for the soft, embedable surface that can conform to the crank journal and trap debris without scoring. Aluminum provides the strong substrate with good heat conductivity to carry away the heat generated at the bearing under heavy loads. The Gold-66 layer is a proprietary alloy added to improve anti-wear and friction properties, helping the bearing survive high-load, high-temperature operation. Together, these three metals give a bearing that handles severe diesel service by combining conformability, structural strength, and durable surface characteristics.

5. Which component supplies timed pulses to each injector in an inline pump?

A. A rotary distributor pump uses multiple plungers

B. A rotary distributor pump provides a single high-pressure delivery to each injector

C. An inline pump has multiple plungers delivering timed pulses to each injector

D. Inline pump stores energy in springs to assist injection

In an inline fuel pump, each cylinder has its own plunger that is driven by the pump's camshaft. As the cam lobes rotate, each plunger rises in its own cylinder, building pressure and opening its delivery valve to push a pulse of fuel to the corresponding injector. Because the camshaft is synchronised with the engine, those pulses occur at precisely the right times for each cylinder, delivering fuel in the correct sequence. This differs from a rotary distributor pump, which uses a single high-pressure output and a distributor rotor to send fuel to each injector in turn rather than each cylinder having its own dedicated plunger. The idea of storing energy in springs to assist injection doesn't describe how inline pumps deliver timed pulses.

6. What type of vibration dampener is used on low horsepower engines?

A. Metal and rubber

B. Viscous

C. Hydraulic

D. Solid state

Vibration dampers are there to absorb the torsional vibrations that come from each engine firing, smoothing the crankshaft's motion and protecting the crank and driveline components. For low horsepower engines, the simplest and most effective solution is a metal hub with a rubber elastomer layer between the crank or hub and the outer ring. The rubber absorbs and dissipates the energy of the torsional oscillations, while the metal parts hold everything together and handle the mechanical load. This setup is inexpensive, compact, and durable for lower RPM and torque, which is why it's the typical choice. More complex dampers, like viscous or hydraulic types, add weight and complexity and are used in different applications or higher-performance setups, while a solid-state approach would not dampen vibrations at all.

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7. The gear train is located in which general area of the engine?

A. Rear of the engine

B. Top of the engine

C. Bottom of the engine

D. Front of the engine

The timing gear train is placed at the front of the engine behind the timing cover. This front location gives a direct, fixed relationship between the crankshaft gear and the camshaft gear, which is essential for keeping valve timing accurate. It also makes the gears easy to inspect, align, and lubricate, since they're accessible from the front and protected by the timing cover. Locating the gears at the front avoids the need to route gears around the sides or from the rear, where proper meshing and maintenance would be impractical. So, the common, practical arrangement is the front of the engine.

8. Regular coolant maintenance primarily ensures which outcome?

A. It reduces noise from the radiator fan

B. It increases fuel octane

C. It prevents corrosion and lubricates water pump and passages, prolonging component life

D. It eliminates the need for antifreeze

Keeping the cooling system protected and well-lubricated is the main goal of regular coolant maintenance. Coolant isn't just a fluid that lowers temperature; it contains corrosion inhibitors that coat metal surfaces inside the engine and passages, protecting them from rust and scale. It also provides lubrication for the water pump and its seals, helping to prevent wear and leaks. When the coolant is kept at the right concentration and replaced as needed, those additives stay effective, deposits don't form, and flowing passages remain clear, which together extend the life of the water pump, radiator, thermostat, and other cooling components. This maintenance doesn't directly reduce radiator fan noise, which is more about airflow, fan design, and belt drive. It also doesn't raise fuel octane, since octane is a fuel property, not related to the cooling system's chemistry. And it doesn't eliminate the need for antifreeze, because antifreeze is the coolant itself; maintaining it keeps antifreeze protection working properly.

9. In manual transmissions, which component often serves a similar safety function by preventing starting unless the clutch is engaged?

A. Brake light switch.

B. Ignition switch.

C. Clutch safety switch.

D. Parking brake interlock.

The key idea is safety interlock for manual transmissions: the engine should not start if the car could lurch or move. The clutch safety switch does exactly this by sensing when the clutch pedal is fully depressed. When you press the clutch, the switch completes the starter circuit (or signals the ignition system) so the engine can crank. If the clutch isn't pressed, the starter is prevented from engaging, keeping the car from starting in gear. That's why this component is the one that provides the safe starting condition. The brake light switch only controls brake lights, not starting. The ignition switch is what starts the engine, but in manual-transmission vehicles the starting interlock is provided by the clutch switch. The parking brake interlock is a separate safety feature and isn't the standard mechanism for ensuring clutch engagement when starting.

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10. What is the purpose of an engine coolant temperature sensor?

A. Provides temperature data to the ECU to adjust fuel, timing, and emissions; monitors engine operating temperature

B. Measures oil pressure

C. Controls turbo boost

D. Measures ambient air temperature

The engine coolant temperature sensor exists to feed the engine computer with the actual temperature of the engine coolant. That temperature tells the ECU how ready the engine is to run efficiently. With a cold engine, the ECU needs to enrich the fuel mixture and often adjust timing and idle behavior to help starting and warming up smoothly. As the coolant warms toward normal operating temperature, the ECU gradually shifts to the standard fuel, timing, and emissions strategies. The sensor also helps control the cooling fan and provides a reliable signal of engine temperature for safe operation. This sensor isn't about oil pressure, turbo boost, or ambient air temperature—those involve different sensors and systems.

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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:

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

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