

ICE MK A-SCHOOL PRACTICE EXAM (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.

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. During a coolant leak emergency, what is the key parameter to monitor?**
 - A. Engine temperatures
 - B. Battery voltage
 - C. Wind speed
 - D. Fuel level
- 2. What does a Dry cylinder liner mean?**
 - A. Dry liner does not come into contact with the coolant
 - B. Dry liner is in direct contact with coolant
 - C. Dry liner has a water jacket
 - D. Dry liner is removable
- 3. What is the purpose of glow plugs on a diesel engine and when are they used?**
 - A. Preheating to aid cold starts; used before cranking in cold conditions
 - B. They are for lubrication
 - C. They regulate idle speed
 - D. They are for cooling
- 4. When reading a pressure-temperature chart for an engine cooling system, what should be compared to spec?**
 - A. Only read the temperature; pressure is irrelevant.
 - B. Interpret the chart by comparing to air temperature.
 - C. Compare measured coolant pressure and temperature to spec; ensure pump, cap, and thermostat maintain proper operating ranges.
 - D. Use the chart to set valve lash.
- 5. Which component serves as the center of rotation and support on the crankshaft?**
 - A. Main journals
 - B. Crank throws
 - C. Connecting rod journals
 - D. Piston pins

- 6. Which statement describes improper torque of the cylinder head?**
- A. Reusing a permanently compressed gasket
 - B. Improper Installation
 - C. Installing a damaged gasket
 - D. Improper torque of the cylinder head: either too tight or improper torque sequence
- 7. A combination of components used to supply fresh clean air to the cylinder where it is combined with fuel to form the fuel-air mixture.**
- A. Air intake system
 - B. Exhaust system
 - C. Lubrication system
 - D. Cooling system
- 8. In an Oil Bath Filter, after air passes through the oil bath, what happens next?**
- A. Air then flows through a screen to remove entrained oil
 - B. It flows directly to the engine
 - C. It passes through a cooling coil
 - D. It is directed to exhaust
- 9. Which of the following is NOT a type of fuel injection system?**
- A. Unit injector (designed with simplicity in mind)
 - B. Electronic Unit Injectors
 - C. Common Rail Type Electronic Control
 - D. Direct fuel injection pump system
- 10. The function of a thermostatic valve is to?**
- A. maintain the engine at its designed operating temperature by regulating pump discharge (from cooler to engine) and jacket water flow through the cooler
 - B. increase fuel pressure
 - C. adjust air intake
 - D. regulate exhaust temperature

Answers

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

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Explanations

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1. During a coolant leak emergency, what is the key parameter to monitor?

A. Engine temperatures

B. Battery voltage

C. Wind speed

D. Fuel level

When a coolant leak happens, the most important thing to watch is the engine temperature. The cooling system's job is to remove heat from the engine; if coolant is leaking out, there's less fluid to carry heat away. That makes the engine heat up quickly, and rising temperature is the clearest early warning of overheating. If the temperature continues to rise or hits the red zone, you risk serious damage like a warped cylinder head, blown head gasket, or engine seizure. Monitoring the temperature gives you a direct, real-time signal to stop and take action before damage occurs. Battery voltage, wind speed, and fuel level don't measure how well the cooling system is working or indicate overheating risk in that moment, so they're not the critical parameter to monitor during a coolant leak.

2. What does a Dry cylinder liner mean?

A. Dry liner does not come into contact with the coolant

B. Dry liner is in direct contact with coolant

C. Dry liner has a water jacket

D. Dry liner is removable

A dry cylinder liner is a bore that does not come into contact with the coolant. In this design, the liner sits in the engine block with no water jacket around it, so heat from the combustion chamber is conducted into the surrounding block and cooled by the block's external cooling passages rather than by coolant inside the liner. That's why the correct description is that the liner does not contact the coolant. The other statements describe a wet liner with a water jacket and direct coolant contact, or imply removability, which isn't the defining feature of a dry liner.

3. What is the purpose of glow plugs on a diesel engine and when are they used?

A. Preheating to aid cold starts; used before cranking in cold conditions

B. They are for lubrication

C. They regulate idle speed

D. They are for cooling

Glow plugs preheat the combustion chamber to aid cold starts, especially in cold conditions. Diesel engines rely on compression to ignite fuel, but when temperatures are low the air in the cylinder isn't hot enough for reliable ignition. The glow plugs are heating elements in the cylinder head that are energized before cranking (and sometimes during the initial start) to raise the chamber temperature so the fuel will ignite when injected. Once the engine starts and warms up, the plugs stop heating. They're used when starting a cold engine or in cold weather; in warm conditions they may not be needed. They're not for lubrication, do not regulate idle speed, and do not cool the engine.

4. When reading a pressure-temperature chart for an engine cooling system, what should be compared to spec?

- A. Only read the temperature; pressure is irrelevant.
- B. Interpret the chart by comparing to air temperature.
- C. Compare measured coolant pressure and temperature to spec; ensure pump, cap, and thermostat maintain proper operating ranges.**
- D. Use the chart to set valve lash.

Comparing measured coolant pressure and temperature to spec is how you verify the cooling system is operating within its designed limits. The chart defines the expected relationship between pressure and temperature in a healthy system, and the pump, cap, and thermostat are the components that keep those values in the proper ranges. If the readings fall within the specified ranges, the system is circulating correctly and staying within safe limits. If either value is off, it points to a potential issue with one of those components or with coolant flow, which could lead to overheating or overpressure. Other ideas don't fit because relying on temperature alone ignores pressure effects, using air temperature as a reference isn't meaningful for engine cooling, and valve lash is unrelated to the cooling system's pressure-temperature behavior.

5. Which component serves as the center of rotation and support on the crankshaft?

- A. Main journals**
- B. Crank throws
- C. Connecting rod journals
- D. Piston pins

Main journals form the crankshaft's axis and support. They ride in the engine block's main bearings, carrying the crankshaft and anything attached to it, so they establish the center of rotation and keep the shaft properly aligned as it spins. The offset portions called crank throws create the turning radius for the connecting rods, enabling the conversion of piston motion to rotation, but they are not the rotation center. The rod journals are the bearing surfaces where the connecting rods attach and move with the crank, yet they don't define the shaft's rotation axis. Piston pins connect the piston to the connecting rod and don't contribute to supporting or rotating the crankshaft.

6. Which statement describes improper torque of the cylinder head?

- A. Reusing a permanently compressed gasket
- B. Improper Installation
- C. Installing a damaged gasket
- D. Improper torque of the cylinder head: either too tight or improper torque sequence**

Torque control of the cylinder head centers on applying the correct torque value in the proper sequence to clamp the head evenly and seal the gasket. When torque is improper, the head may be over-tightened, which risks warping the head or stripping threads, or under-tightened/incorrectly sequenced, which prevents even clamping and seals from forming. The statement that describes improper torque is the one that specifies the head being torqued either too tight or with an improper torque sequence. This directly points to the timing and amount of clamping pressure, which is what keeps the gasket sealed and the head flat against the surface. Gasket condition and installation issues are important, but they relate to the state of the gasket or how it was installed rather than how the torque was applied. Understanding the proper torque value and the correct sequence helps prevent leaks and distortion by ensuring uniform clamping across the entire head.

7. A combination of components used to supply fresh clean air to the cylinder where it is combined with fuel to form the fuel-air mixture.

A. Air intake system

B. Exhaust system

C. Lubrication system

D. Cooling system

Delivering fresh, clean air to the cylinder is the job of the air intake system. It starts with an air filter that traps dust and particles, then uses intake ducts and a throttle body or carburetor to regulate how much air enters. The air is then routed through an intake manifold to be distributed to each cylinder. Clean air is essential because contaminants can cause wear and affect combustion, while the amount and temperature of the incoming air influence the fuel-air mix and engine efficiency. The other systems do different jobs: the exhaust system removes burnt gases, the lubrication system keeps parts lubricated, and the cooling system removes excess heat. So the components that supply clean air for mixing with fuel are the air intake system.

8. In an Oil Bath Filter, after air passes through the oil bath, what happens next?

A. Air then flows through a screen to remove entrained oil

B. It flows directly to the engine

C. It passes through a cooling coil

D. It is directed to exhaust

Air that has just passed through the oil bath still carries some oil droplets. A screen in the filter assembly acts to separate and remove those entrained oil droplets from the airstream, catching them and letting clean air continue on toward the engine. This step prevents oil from entering the engine while the oil droplets are returned to the oil bath. It isn't routed through a cooling coil or sent straight to exhaust—the next stage is delivering clean air to the engine.

9. Which of the following is NOT a type of fuel injection system?

A. Unit injector (designed with simplicity in mind)

B. Electronic Unit Injectors

C. Common Rail Type Electronic Control

D. Direct fuel injection pump system

Fuel delivery arrangements are classified by how fuel is metered and delivered to the cylinders. Three modern, recognized configurations are unit injectors (one injector per cylinder that includes its own pump), electronic unit injectors (each injector is electronically actuated for precise timing and quantity), and common-rail systems (a high-pressure rail feeds all injectors with electronic control). The description of a direct fuel injection pump system isn't treated as a separate injection system type in these classifications. It refers to the pump architecture that supplies injectors, rather than a distinct method of injecting fuel into the cylinders. The other three are established, distinct injection system types, while a "direct fuel injection pump system" is not categorized that way.

10. The function of a thermostatic valve is to?

- A. maintain the engine at its designed operating temperature by regulating pump discharge (from cooler to engine) and jacket water flow through the cooler**
- B. increase fuel pressure
- C. adjust air intake
- D. regulate exhaust temperature

Thermostatic valves in engine cooling systems manage coolant flow to hold the engine at its designed operating temperature. They respond to coolant temperature and regulate how much coolant is circulated through the radiator (the cooler) versus a bypass path. When the engine is cold, the valve restricts flow to the radiator so the coolant stays in the engine, allowing it to warm up quickly. As the coolant heats up, the valve opens more, permitting greater flow through the radiator to remove excess heat and keep the engine temperature within a safe range. This mechanism maintains consistent engine performance and prevents overheating or overcooling. It does not control fuel pressure, air intake, or exhaust temperature.

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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://icemkaschool.examzify.com>

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

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