Characteristics of Natural Gas Practice Test (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 3 things must be present for combustion to occur?

A. Natural gas; Air; Heat

B. Water; Oxygen; Heat

C. Natural gas; CO_2; Heat

D. Fuel; Oxygen; Pressure

2. Lack of gas at an appliance is best described by which pressure condition?

A. Under pressurization

B. Over pressure

C. Normal pressure

D. Intermittent flow

3. What condition causes lack of gas at an appliance?

A. Over pressure

B. Under pressurization

C. Blocked vent

D. Gas leak

4. Which flame color best indicates proper combustion?

A. Yellow flame

B. Blue flame

C. Red flame

D. No flame

5. What is the role of glycol dehydration in natural gas processing?

A. Removes water by absorbing it into glycol, which is later regenerated by heating; reduces water content to prevent hydrates.

B. Removes CO_2 through chemical reaction.

C. Adds hydrogen sulfide to the gas.

D. Increases the water content of gas.

6. How do pressure and temperature influence dew points in natural gas?

- **A. Higher temperatures promote condensation; lowering pressure shifts dew points.**
- **B. Dew points are independent of pressure and temperature.**
- **C. Lower temperatures promote condensation; higher pressures can raise partial pressures and shift dew points; both affect when and where liquids form.**
- **D. Only humidity affects dew point, not pressure or temperature.**

7. What is the ignition temperature of propane?

- **A. 400 degrees Fahrenheit**
- **B. 600 degrees Fahrenheit**
- **C. 800 degrees Fahrenheit**
- **D. 84%**

8. What impurity reduces heating value and increases corrosion risk?

- **A. Carbon dioxide (CO2)**
- **B. Methane (CH4)**
- **C. Nitrogen (N2)**
- **D. Helium (He)**

9. What percentage of methane is natural gas composed of?

- **A. 90%**
- **B. 70%**
- **C. 80%**
- **D. 95%**

10. Which statement is true about ignition temperatures given in the material?

- **A. Propane ignites at 1110 degrees Fahrenheit**
- **B. Natural gas ignites at 1110 degrees Fahrenheit**
- **C. Butane ignites at 1110 degrees Fahrenheit**
- **D. Methane ignites at 1110 degrees Fahrenheit**

Answers

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

Explanations

1. What 3 things must be present for combustion to occur?

A. Natural gas; Air; Heat

B. Water; Oxygen; Heat

C. Natural gas; CO2; Heat

D. Fuel; Oxygen; Pressure

Combustion needs three elements: a fuel, an oxidizer, and enough heat to start the reaction. The fuel is what will burn, the oxidizer (usually oxygen in air) reacts with that fuel, and heat provides the energy to reach ignition so the flame can be sustained. In this case, natural gas is the fuel, air supplies the oxygen, and heat is the energy input to ignite the flame. Water isn't a fuel, and CO2 is a product of combustion, not a reactant. Pressure isn't a required ingredient for combustion to occur, though it can influence flame behavior. So the essential trio is fuel, oxidizer, and heat.

2. Lack of gas at an appliance is best described by which pressure condition?

A. Under pressurization

B. Over pressure

C. Normal pressure

D. Intermittent flow

When there isn't enough gas reaching the appliance, the pressure at the appliance is too low—this is under-pressurization. Appliances require a minimum flow and pressure to push gas through the line and into the burner. If the pressure falls below that minimum, gas can't reach the burner, so there's no flame or a very weak flame. This is different from over pressure (too high pressure that safety devices respond to), normal pressure (adequate pressure and a functioning flame), or intermittent flow (gas comes and goes rather than being consistently low).

3. What condition causes lack of gas at an appliance?

A. Over pressure

B. Under pressurization

C. Blocked vent

D. Gas leak

Gas appliances need a steady, enough pressure in the supply line to push the gas to the burner. When the line is under-pressurized, there isn't enough gas reaching the appliance, so the flame can't light or stays weak. This can happen if a regulator isn't delivering enough downstream pressure, a main valve isn't fully open, piping is too long or too narrow for the demand, or demand exceeds supply. An overpressure situation would instead push gas back or trigger safety shutoffs, not cause a lack of gas at the appliance. A blocked vent affects air for combustion and exhaust rather than the amount of gas reaching the burner. A gas leak means gas is escaping somewhere in the system, which is hazardous and can cause pressure loss, but the symptom described is best explained by insufficient downstream pressure reaching the appliance.

4. Which flame color best indicates proper combustion?

A. Yellow flame

B. Blue flame

C. Red flame

D. No flame

Flame color shows how completely the fuel is burning and how well the air supply matches the flame. A blue flame means high temperature and complete combustion, with most fuel turning into carbon dioxide and water and very little soot or unburned fuel. This indicates a good air-to-fuel balance and efficient burning. A yellow flame glows from soot particles, signaling incomplete combustion and a richer or starved-air mixture, which wastes fuel and can produce pollutants. Red flames tend to be cooler and less efficient, and no flame means combustion isn't occurring at all. So the blue flame is the best indicator of proper combustion.

5. What is the role of glycol dehydration in natural gas processing?

A. Removes water by absorbing it into glycol, which is later regenerated by heating; reduces water content to prevent hydrates.

B. Removes CO_2 through chemical reaction.

C. Adds hydrogen sulfide to the gas.

D. Increases the water content of gas.

Glycol dehydration works by removing water from natural gas through absorption into a liquid desiccant, typically triethylene glycol. The gas stream contacts lean glycol in absorption towers, where water is picked up by the glycol, producing rich glycol. The water-laden glycol is then heated in a reboiler to drive off the absorbed water, regenerating the glycol so it can be reused. This process lowers the gas's water content to meet pipeline specifications and, importantly, prevents hydrates from forming, reduces corrosion risk, and avoids liquid water in the pipeline. It's designed specifically to remove water; it doesn't chemically remove CO_2 or introduce hydrogen sulfide, and it decreases, not increases, the gas's water content.

6. How do pressure and temperature influence dew points in natural gas?

A. Higher temperatures promote condensation; lowering pressure shifts dew points.

B. Dew points are independent of pressure and temperature.

C. Lower temperatures promote condensation; higher pressures can raise partial pressures and shift dew points; both affect when and where liquids form.

D. Only humidity affects dew point, not pressure or temperature.

Dew point in natural gas is the temperature at which condensables (like water and heavier hydrocarbons) begin to form liquids under the current pressure and gas composition. Because condensation happens when the vapor becomes saturated, both temperature and pressure matter. Lowering temperature makes the vapor less able to stay in the gas phase, so saturation is reached at a higher tendency to condense — you reach the dew point as the temperature drops. At the same time, increasing pressure raises the partial pressures of the condensable components, pushing the dew point to a higher temperature as well. In short, cooler gas promotes condensation, and higher pressure raises the temperature at which condensation occurs; both factors determine when and where liquids form. The other statements misstate the relationships: dew point isn't independent of pressure and temperature, and higher temperatures actually reduce the tendency to condense rather than promote it; humidity alone doesn't set the dew point in a gas mixture.

7. What is the ignition temperature of propane?

A. 400 degrees Fahrenheit

B. 600 degrees Fahrenheit

C. 800 degrees Fahrenheit

D. 84%

Ignition temperature here means the autoignition temperature—the minimum temperature at which propane will ignite in air without an external flame or spark. For propane, this value is around 470°C, which converts to roughly 850–900°F. The temperatures listed (400°F, 600°F, 800°F) are all below that autoignition range, so they wouldn't reliably cause autoignition on their own. The choice that shows a percent is not a temperature and doesn't apply to ignition temperature. In real-world scenarios, propane can ignite at lower temperatures if a spark or flame is present, but autoignition requires the higher temperature range noted above.

8. What impurity reduces heating value and increases corrosion risk?

A. Carbon dioxide (CO2)

B. Methane (CH4)

C. Nitrogen (N2)

D. Helium (He)

Carbon dioxide is the impurity that lowers the gas's energy content and can raise corrosion risk. It isn't combustible, so its presence dilutes the amount of fuel energy per unit volume, reducing the heating value of the gas. In addition, when water is present, CO2 forms carbonic acid, which can accelerate corrosion of steel pipelines and equipment. Nitrogen and helium are inert and mainly dilute the gas without significantly increasing corrosion, and methane is the combustible component that actually contributes energy. So CO2 is the impurity that both reduces heating value and increases corrosion risk.

9. What percentage of methane is natural gas composed of?

A. 90%

B. 70%

C. 80%

D. 95%

Natural gas is defined by being dominated by methane, which is the main component by volume. In practice, methane makes up about 85–95% of natural gas, so the figure around 90% is the most representative and commonly used. The rest consists of smaller amounts of other hydrocarbons (like ethane and propane) and non-hydrocarbons (such as carbon dioxide, nitrogen, and sometimes hydrogen sulfide). The exact percentage can vary by gas field and processing, but 90% best reflects the typical composition encountered. The other percentages are either too low to reflect methane as the dominant component, or represent a high-end or atypical composition not as commonly used as the standard average.

10. Which statement is true about ignition temperatures given in the material?

A. Propane ignites at 1110 degrees Fahrenheit

B. Natural gas ignites at 1110 degrees Fahrenheit

C. Butane ignites at 1110 degrees Fahrenheit

D. Methane ignites at 1110 degrees Fahrenheit

Ignition temperature is the temperature at which a gas in air will ignite on its own, without a flame or spark. The material states that natural gas has an ignition temperature of 1110 °F, so the statement about natural gas igniting at that temperature aligns with the data provided. This value is specific to natural gas (primarily methane) in the given context, which is why it's the correct one. Other fuels have different ignition temperatures, so their values wouldn't be stated as 1110 °F in the same material.

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://characteristicsofnaturalgas.examzify.com

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