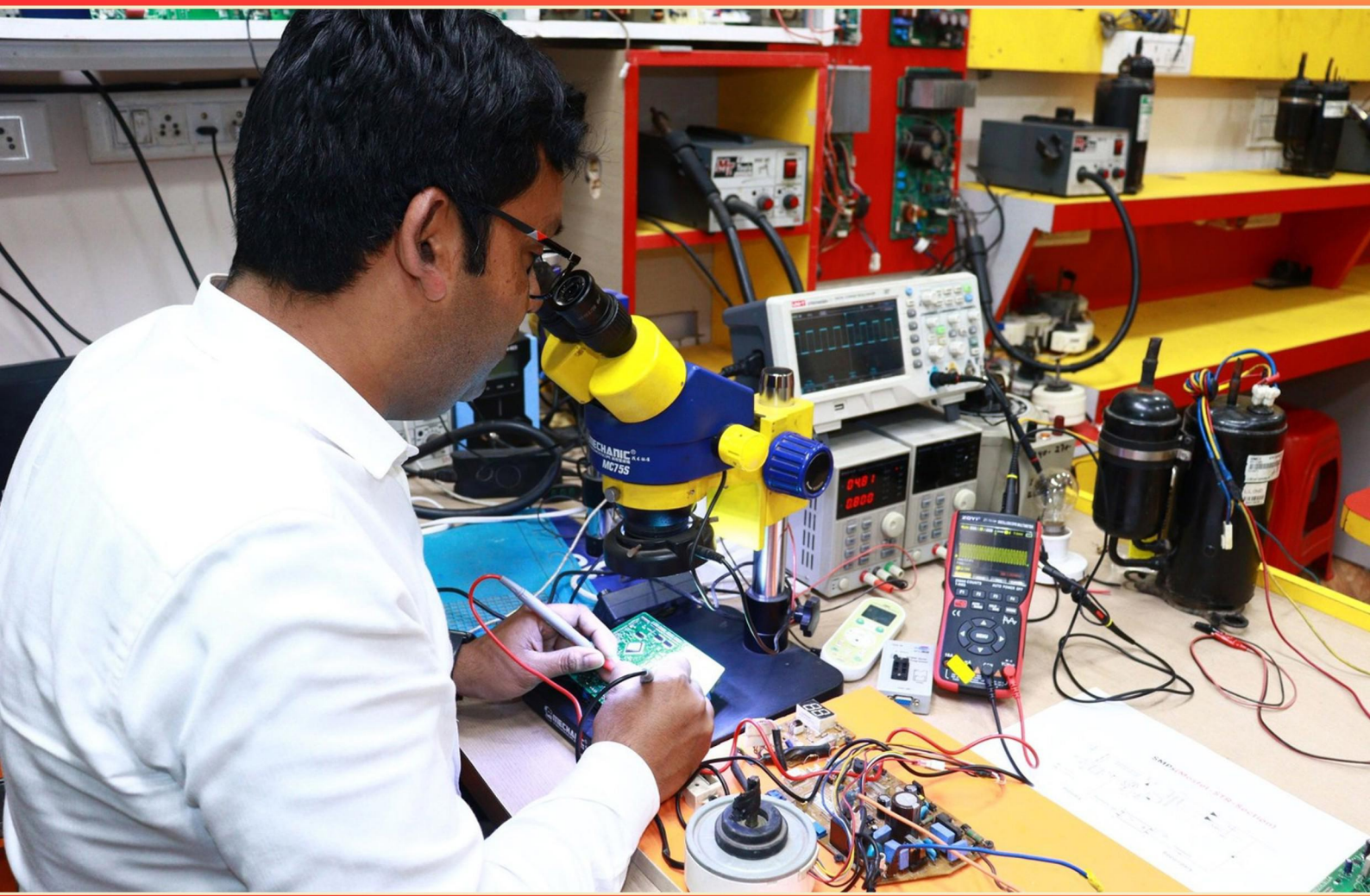
BOMI AIR HANDLING, WATER TREATMENT & PLUMBING SYSTEMS PRACTICE TEST (SAMPLE)

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.

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. Where are volume dampers typically installed in a duct system?

A. In the main supply plenum

B. In each branch duct

C. At the fan inlet

D. Inside the diffuser

2. Which of the following is NOT one of the seven psychrometric properties listed?

A. Dew Point

B. Enthalpy

C. Absolute Humidity

D. Humidity Ratio

3. Back siphonage is caused by a drop in pressure relative to ambient. What condition can cause such a drop?

A. A sudden drop in system pressure

B. A sudden rise in system pressure

C. Stable, constant pressure

D. Gradual warming of water

4. Which statement describes the relationship between conductivity and TDS in water analysis?

A. Conductivity measures pH, not TDS

B. Conductivity meters cannot be used for TDS estimation

C. Conductivity is used to infer TDS levels

D. TDS is measured directly by pH

5. What happens to the boiling point when pressure is lowered?

A. It remains the same.

B. It rises.

C. It lowers.

D. It becomes unpredictable.

6. What pH level indicates pure or neutral water?

A. 6.5

B. 7

C. 9

D. 8.5

7. Larger pipe is measured by which dimension?

A. Inside diameter

B. Wall thickness

C. Outside diameter

D. Length

8. Which statement is true about vibration transmission when comparing tubing and piping?

A. Tubing has less tendency to transmit vibration due to rigidity

B. Piping transmits less vibration due to rigidity

C. Tubing transmits more vibration because of thin walls

D. Piping and tubing transmit vibration equally

9. What effect does infrequent use have on a water seal trap?

A. May lose their seal as a result

B. Seal becomes more secure

C. Water pressure increases

D. It seals itself tighter

10. What do ion exchangers do?

A. Remove dissolved oxygen from the water

B. Remove harmful minerals from the water

C. Add minerals to the water

D. Filter particles from the water

Answers

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

Explanations

1. Where are volume dampers typically installed in a duct system?

A. In the main supply plenum

B. In each branch duct

C. At the fan inlet

D. Inside the diffuser

Balancing airflow across a duct system is achieved by adjusting airflow right where it splits into individual branches. Volume dampers are placed in each branch duct, at or near the branch takeoff from the main supply, so you can independently tune the flow to each zone. This location makes it possible to meet the design intent for each area without altering the entire trunk or the upstream fan performance. Placing dampers in the main supply plenum would affect the whole system uniformly and makes it hard to balance individual branches. Installing them at the fan inlet would disrupt the fan operation and pressure relationships upstream. Putting them inside the diffuser would change room discharge patterns and wouldn't provide a means to adjust the flow to each branch.

2. Which of the following is NOT one of the seven psychrometric properties listed?

A. Dew Point

B. Enthalpy

C. Absolute Humidity

D. Humidity Ratio

In psychrometrics, the state of moist air is described by a set of properties used on the psychrometric chart to relate temperature, moisture, and energy. The seven commonly listed properties are dry-bulb temperature, wet-bulb temperature, dew point, relative humidity, humidity ratio (mass of water vapor per mass of dry air), enthalpy, and specific volume. Absolute humidity—mass of water per volume of air—looks related but isn't treated as one of the standard independent psychrometric properties. It depends on pressure and temperature and isn't used as a primary coordinate on the chart, so it isn't included among the seven. The other properties cited (dew point, enthalpy, humidity ratio) are core elements of the psychrometric framework, describing condensation conditions, energy content, and moisture content per unit of dry air, respectively.

3. Back siphonage is caused by a drop in pressure relative to ambient. What condition can cause such a drop?

A. A sudden drop in system pressure

B. A sudden rise in system pressure

C. Stable, constant pressure

D. Gradual warming of water

Back siphonage happens when the pressure in the water supply line falls below ambient pressure, creating suction that can pull non-potable water back into the potable system through a cross-connection. The condition that can cause this drop is a sudden decrease in system pressure. A sudden rise in pressure, stable pressure, or gradual warming of water do not create the negative pressure needed for back siphonage. This is precisely why backflow prevention devices are used—to prevent contaminants from being drawn back into the system when pressure dips occur.

4. Which statement describes the relationship between conductivity and TDS in water analysis?

A. Conductivity measures pH, not TDS

B. Conductivity meters cannot be used for TDS estimation

C. Conductivity is used to infer TDS levels

D. TDS is measured directly by pH

Conductivity measures how well water conducts electricity, which rises with the concentration of dissolved ions. TDS is the total amount of dissolved solids, most of which become ions in solution. Because the amount of dissolved ions drives conductivity, you can estimate TDS from conductivity values rather than measuring solids directly. In practice, a conversion factor is applied: TDS (mg/L) ≈ conductivity (µS/cm) × factor, with the factor depending on the water's ion composition (commonly around 0.5 to 0.7 for many freshwater samples). This is an approximation, since some nonionic substances don't affect conductivity much and highly saline waters may require a different factor. pH, on the other hand, reflects acidity/alkalinity and does not indicate how much dissolved solid is present, which is why TDS is estimated from conductivity rather than measured by pH.

5. What happens to the boiling point when pressure is lowered?

A. It remains the same.

B. It rises.

C. It lowers.

D. It becomes unpredictable.

Boiling point is the temperature at which a liquid's vapor pressure equals the surrounding pressure. If you lower the surrounding pressure, that balance is reached at a lower temperature, so the liquid boils at a lower temperature. This is why water boils at lower temperatures on high mountains, where air pressure is reduced. In a vacuum, a liquid can even boil at room temperature because the external pressure is so low. The key idea is that boiling begins when vapor pressure matches external pressure, and lowering that external pressure lowers the required temperature for boiling.

6. What pH level indicates pure or neutral water?

A. 6.5

B. 7

C. 9

D. 8.5

pH measures how acidic or alkaline water is. Pure water at standard room temperature has equal concentrations of hydrogen ions and hydroxide ions, which places it at the neutral point on the pH scale. That neutral point is pH 7. Values below 7 indicate acidity, while values above 7 indicate basicity. So the neutral, pure water level is pH 7. The other numbers are either acidic (6.5) or basic (8.5, 9). In practice, dissolved gases like CO2 and minerals can shift pH away from 7, but for pure water at room temperature, neutrality is pH 7.

7. Larger pipe is measured by which dimension?

A. Inside diameter

B. Wall thickness

C. Outside diameter

D. Length

The size of a pipe is defined by its outside diameter. That outer dimension is standardized so fittings, flanges, and couplings can reliably mate with the pipe. The inside bore, which determines how much fluid can flow, depends on the wall thickness (the schedule); two pipes with the same outside diameter can have different inside diameters if their wall thickness differs. Length is simply how long the pipe is, not its cross-sectional size. So increasing the overall size of the pipe means increasing the outside diameter, not the inside diameter or the wall thickness alone.

8. Which statement is true about vibration transmission when comparing tubing and piping?

A. Tubing has less tendency to transmit vibration due to rigidity

B. Piping transmits less vibration due to rigidity

C. Tubing transmits more vibration because of thin walls

D. Piping and tubing transmit vibration equally

Vibration moves more easily along a path that can flex and resonate; a stiffer, less deformable path tends to pass less of the vibrational energy along. Tubing often provides a more rigid, compact path in typical installations, so it doesn't deform as readily under the same vibrational input. That reduced deformation means less energy is coupled into the downstream structure, resulting in lower vibration transmission. Piping, being larger and often spanning longer distances with more opportunity to flex and resonate, tends to carry more of the vibrational energy away, so vibration transmission is greater. In short, the relative rigidity and shorter, stiffer path of tubing make it transmit less vibration than piping.

9. What effect does infrequent use have on a water seal trap?

A. May lose their seal as a result

B. Seal becomes more secure

C. Water pressure increases

D. It seals itself tighter

Water seals in a trap rely on a standing layer of water to block sewer gases from coming back into the building. When a fixture is used only rarely, that water can evaporate or be drawn out by air movement and other flows in the plumbing system, leaving the trap dry. A dry trap loses its barrier, so odors and gases can escape into the space. This is why infrequent use can cause the seal to be lost. The other ideas don't fit because a dry or depleted trap isn't made tighter or stronger by infrequent use, and it doesn't increase water pressure. To prevent this, periodically run water into the fixture or pour water into the trap to re-prime it.

10. What do ion exchangers do?

A. Remove dissolved oxygen from the water

B. Remove harmful minerals from the water

C. Add minerals to the water

D. Filter particles from the water

Ion exchangers remove dissolved minerals (ions) from water by exchanging them with ions attached to a resin. As water passes through the resin, undesirable ions like calcium and magnesium are swapped with ions on the resin (often sodium or hydrogen), removing those minerals from the water and, in many cases, softening it. This is different from removing dissolved oxygen (a gas), adding minerals, or filtering physical particles, which are not functions of ion-exchange systems.

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://bomiairhandlingplumbingsys.examzify.com

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