

General A&P 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

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- 1. Which configuration requires the most electrical power?**
 - A. Four 30 watt lamps arranged in a 12 volt parallel circuit**
 - B. A 24 volt anticollision light circuit consisting of 2 light assemblies which require 3 amperes each during operation**
 - C. A 100 watt load at 5 volts**
 - D. A 1/5 HP 24 volt motor which is 75 percent efficient**

- 2. Which will cause the resistance of a conductor to decrease?**
 - A. Decrease the length and increase the cross sectional area.**
 - B. Increase the length and decrease the cross sectional area.**
 - C. Decrease the length only.**
 - D. Increase the cross sectional area only.**

- 3. A dimension on a blueprint is given as 4.387 inches +.005/-.002. Which statement is true?**
 - A. The maximum acceptable size is 4.390 inches**
 - B. The minimum acceptable size is 4.385 inches**
 - C. The minimum acceptable size is 4.382 inches**
 - D. The maximum acceptable size is 4.395 inches**

- 4. A mechanic has completed a bonded honeycomb repair using the potted compound repair technique. What nondestructive testing method is used to determine the soundness of the repair after the repair has cured?**
 - A. Eddy Current**
 - B. Metallic Ring Test**
 - C. Ultrasonic test**
 - D. Radiographic**

- 5. What does a discrepancy list after an inspection imply about airworthiness?**
 - A. The item is airworthy only if no discrepancies exist**
 - B. Except for these discrepancies, the item inspected is airworthy**
 - C. The item is not airworthy**
 - D. The item does not require any further action**

- 6. Ethylene dibromide in aviation gasoline serves to scavenge lead oxide from the cylinder combustion chambers. Which of the following is its function?**
- A. To raise octane rating**
 - B. To reduce evaporation losses**
 - C. To prevent water condensation**
 - D. To scavenge lead oxide from the cylinder combustion chambers**
- 7. What is the maximum distance from the weld at which oxide should not form on the base metal?**
- A. 1/2 inch**
 - B. 1/4 inch**
 - C. 3/4 inch**
 - D. 1 inch**
- 8. The basis for transformer operation is the use of alternating current due to what phenomenon?**
- A. Mutual inductance**
 - B. Capacitance**
 - C. Inductance**
 - D. Resistance**
- 9. The voltage across the external 2 Ω load when the battery delivers 10 A is:**
- A. 20 V**
 - B. 25.2 V**
 - C. 10 V**
 - D. 5 V**
- 10. In hydraulic calculations, what unit is used for pressure when multiplying by area to obtain force?**
- A. Pascals**
 - B. PSI**
 - C. Bar**
 - D. Atmospheres**

Answers

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

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Explanations

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1. Which configuration requires the most electrical power?
- A. Four 30 watt lamps arranged in a 12 volt parallel circuit
 - B. A 24 volt anticollision light circuit consisting of 2 light assemblies which require 3 amperes each during operation
 - C. A 100 watt load at 5 volts
 - D. A 1/5 HP 24 volt motor which is 75 percent efficient**

Power is the rate of energy use, given by $P = VI$. When a device has a stated mechanical output and efficiency, the electrical input is $P_{in} = P_{out} / \eta$. Four 30-watt lamps at 12 V: each lamp uses 30 W, so total is $4 \times 30 = 120$ W. Two 24 V light assemblies drawing 3 A each: total current is 6 A, so $P = 24 \text{ V} \times 6 \text{ A} = 144$ W. A 100-watt load at 5 V already specifies its electrical power, so it uses 100 W. A 1/5 HP (0.2 HP) motor at 24 V with 75% efficiency: $0.2 \text{ HP} \approx 0.2 \times 746 \approx 149$ W of mechanical output. Input power is $149 \text{ W} / 0.75 \approx 199$ W. Thus, the motor configuration requires the most electrical power (about 199 W).

2. Which will cause the resistance of a conductor to decrease?
- A. Decrease the length and increase the cross sectional area.**
 - B. Increase the length and decrease the cross sectional area.
 - C. Decrease the length only.
 - D. Increase the cross sectional area only.

Resistance follows $R = \rho L/A$, so it grows with longer paths and shrinks when the cross-sectional area gets larger. Shortening the conductor reduces the distance electrons must travel, lowering resistance. Increasing the cross-sectional area provides more pathways for current and lowers resistance by reducing the current density. Doing both at once amplifies the effect, giving a smaller resistance than changing either parameter alone. That's why decreasing length and increasing cross-sectional area together will cause the resistance to decrease.

3. A dimension on a blueprint is given as 4.387 inches $+0.005/-0.002$. Which statement is true?
- A. The maximum acceptable size is 4.390 inches
 - B. The minimum acceptable size is 4.385 inches**
 - C. The minimum acceptable size is 4.382 inches
 - D. The maximum acceptable size is 4.395 inches

Tolerance defines the range of acceptable sizes around the basic dimension. The given dimension is 4.387 inches with a tolerance of $+0.005/-0.002$, so the acceptable range runs from $4.387 - 0.002$ to $4.387 + 0.005$, i.e., from 4.385 inches to 4.392 inches. Therefore, the minimum acceptable size is 4.385 inches. The maximum should be 4.392 inches, so statements claiming 4.390 or 4.395 as the maximum aren't correct. A size of 4.382 inches would be below the lower limit and rejected.

4. A mechanic has completed a bonded honeycomb repair using the potted compound repair technique. What nondestructive testing method is used to determine the soundness of the repair after the repair has cured?

A. Eddy Current

B. Metallic Ring Test

C. Ultrasonic test

D. Radiographic

Delaminations or voids between the face sheet and core are what you're checking for after a bonded honeycomb repair. The Metallic Ring Test is designed for this situation because it quickly gauges bond integrity in honeycomb panels. By placing a metal ring over the repaired area and lightly tapping, you listen for a consistent, crisp resonance that indicates a solid bond; if there's poor bonding or a delamination, the sound changes or the ring doesn't ring uniformly, signaling a defect. This method is fast, requires minimal equipment, and is specifically suited to detecting issues in honeycomb repairs. Other methods exist—for example, eddy current mainly detects surface cracks in metals, ultrasonic testing is more involved and probes for internal flaws with equipment, and radiography can reveal voids but is less practical for quick post-repair checks and requires radiation access.

5. What does a discrepancy list after an inspection imply about airworthiness?

A. The item is airworthy only if no discrepancies exist

B. Except for these discrepancies, the item inspected is airworthy

C. The item is not airworthy

D. The item does not require any further action

Discrepancy lists identify deviations from airworthiness standards found during an inspection. They show issues that must be corrected, but they don't automatically render the entire item unairworthy. The item is considered airworthy for flight except for the listed discrepancies, and once those issues are addressed, airworthiness is restored. The other options are too absolute: some discrepancies can be allowed under approved limitations, and action is typically required to fix them rather than saying no further action is needed.

6. Ethylene dibromide in aviation gasoline serves to scavenge lead oxide from the cylinder combustion chambers. Which of the following is its function?

- A. To raise octane rating
- B. To reduce evaporation losses
- C. To prevent water condensation
- D. To scavenge lead oxide from the cylinder combustion chambers**

Lead scavenging is the main idea here. In avgas that uses tetraethyl lead for anti-knock, lead oxide can deposit on the combustion chamber, valves, and plugs as the fuel burns. Ethylene dibromide is added to react with those lead oxide deposits, forming lead bromide, which is more easily carried away with the exhaust. This keeps the combustion chamber cleaner and helps prevent lead buildup on critical parts. So its function is to scavenge lead oxide from the cylinder combustion chambers. It doesn't primarily raise octane, reduce evaporation losses, or prevent water condensation.

7. What is the maximum distance from the weld at which oxide should not form on the base metal?

- A. 1/2 inch**
- B. 1/4 inch
- C. 3/4 inch
- D. 1 inch

Oxidation happens when the base metal is heated and exposed to air during welding. The protective shielding and flux work to limit this oxidation to a narrow zone around the weld. The accepted standard is that oxide should not extend beyond about one-half inch from the weld. In other words, oxide may be present within that half-inch region, but beyond it the base metal should be clean. If oxide is seen farther out, it suggests excessive heat input or inadequate shielding, signaling a need to adjust technique. The other distances would either imply a smaller or larger oxidation zone than what is typically acceptable, which is why one-half inch is the best answer.

8. The basis for transformer operation is the use of alternating current due to what phenomenon?

A. Mutual inductance

B. Capacitance

C. Inductance

D. Resistance

Transformers work through electromagnetic induction between two windings that share a magnetic path. The key phenomenon is mutual inductance: a changing current in the primary coil creates a changing magnetic flux that links both windings, so the secondary coil experiences a induced voltage proportional to the turns ratio. Alternating current is essential because it keeps the magnetic flux continuously changing; with direct current, the flux builds up and then becomes steady, so after the initial transient there's no changing flux to induce a sustained voltage in the secondary. Capacitance involves electric fields and energy storage in a capacitor, not the transfer between coils. Inductance describes a coil's opposition to changes in its own current, but by itself doesn't couple energy to the other winding. Resistance just causes heating and losses. So the best explanation is mutual inductance as the enabling mechanism for transformer action.

9. The voltage across the external $2\ \Omega$ load when the battery delivers 10 A is:

A. 20 V

B. 25.2 V

C. 10 V

D. 5 V

Voltage across a component follows Ohm's law: $V = I \times R$. The external load has a resistance of $2\ \Omega$ and carries 10 A. Multiply to get the voltage drop across it: $10\ \text{A} \times 2\ \Omega = 20\ \text{V}$. So the voltage across the external load is 20 V. Even if there's internal resistance in the battery, the drop across the $2\ \Omega$ load depends only on the current through it and its resistance, which here gives 20 V. The other numbers would require different current or resistance, which isn't given.

10. In hydraulic calculations, what unit is used for pressure when multiplying by area to obtain force?

A. Pascals

B. PSI

C. Bar

D. Atmospheres

The key concept is that force comes from multiplying pressure by area: $F = P \times A$. The unit of the resulting force depends on the units you use for pressure and for area, and they must combine consistently. In hydraulic calculations that use US customary units, area is often in square inches and the desired force unit is pounds-force. When you express pressure as pounds per square inch (psi) and multiply by an area of square inches, the square inches cancel, leaving pounds-force. For example, $60 \text{ psi} \times 2 \text{ in}^2 = 120 \text{ lbf}$. If you were using SI units, you would express pressure in pascals and area in square meters, giving force in newtons. Bar or atmosphere can be used as pressure units as long as you pair them with the corresponding area units and convert to the appropriate force unit. So, psi is commonly used in many hydraulic contexts because it directly yields a practical force unit (pounds-force) when combined with square-inch areas.

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://genaandp.examzify.com>

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

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