AASA AVIATION 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.

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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. **Calculate the Specific Air Range for TAS 320 kts and fuel burn 4000 kg/hr.**

   A. 80 nm/tonne

   B. 128 nm/tonne

   C. 64 nm/tonne

   D. 160 nm/tonne

2. **Which occurs when an engine is already in a self-sustaining state?**

   A. Engine Requires Starter to Accelerate

   B. Engine Cannot Accelerate

   C. Engine Could Accelerate Without Starter Motor

   D. Engine Stalls

3. **The purpose of variable inlet guide vanes is to prevent compressor blade stall at what engine operating condition?**

   A. Increase Fuel Flow

   B. Prevent Compressor Blade Stall At Low RPM

   C. Increase Exhaust Velocity

   D. Reduce Oil Consumption

4. **In a high bypass turbofan engine, what is the function of the reverse thrust system?**

   A. To generate thrust during landing

   B. Blocker doors divert cold stream air

   C. To increase core pressure

   D. To close the bypass duct

5. **An aircraft with a TAS of 300 kts has a fuel burn of 3000 kg/hr. The specific air range as a ratio of distance travelled per tonne of fuel would be most correctly expressed as a ratio of**

   A. 100nm/Tonne

   B. 30nm/Tonne

   C. 1000nm/Tonne

   D. 1nm/Tonne

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6. How can warnings from the master warning system be cancelled?

A. Press the master warning/caution button

B. Switch off the aircraft battery

C. Toggle the avionics switch off

D. Ignore and continue flight

7. Regarding hydroplaning and tyre pressure, which statement is correct?

A. Minimum hydroplaning speed is proportional to the square root of tyre pressure

B. Minimum hydroplaning speed is proportional to tyre pressure

C. Hydroplaning speed is independent of tyre pressure

D. Hydroplaning speed is inversely proportional to square root of tyre pressure

8. Methods for defining waypoints entered by the crew into the FMC database include

A. Lat and long, place with bearing/dist, place with bearing and place with bearing

B. Lat and long only

C. Place with bearing and distance only

D. Bearing-only with distance

9. Which statement best describes the behavior of air in a divergent duct at subsonic speeds?

A. Constant density, pressure rises, velocity falls

B. Density increases with velocity increases

C. Density decreases with pressure increase

D. Pressure falls with velocity increase

10. When is a hot battery bus powered in a jet aircraft electrical system?

A. Only when a charged battery is installed in the aircraft

B. Only when the engine is running

C. Only when external power is connected

D. Only when the generator is online

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Answers

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

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Explanations

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1. Calculate the Specific Air Range for TAS 320 kts and fuel burn 4000 kg/hr.

A. 80 nm/tonne

B. 128 nm/tonne

C. 64 nm/tonne

D. 160 nm/tonne

Specific Air Range tells you how far you can fly for each unit of fuel used. With a true airspeed of 320 knots, you cover 320 nautical miles in one hour. If fuel burn is 4000 kg per hour, that's 4 tonnes per hour. So per tonne of fuel, you can fly 320 divided by 4, which equals 80 nautical miles. Therefore, the SAR is 80 nm per tonne. This assumes constant speed and fuel flow and ignores winds and reserves.

2. Which occurs when an engine is already in a self-sustaining state?

A. Engine Requires Starter to Accelerate

B. Engine Cannot Accelerate

C. Engine Could Accelerate Without Starter Motor

D. Engine Stalls

A self-sustaining engine continues to run and speed up on its own because the combustion process provides enough energy to maintain motion without external help. Once ignition has occurred and the engine reaches a speed where the fuel-air mix, compression, and flame propagation keep firing reliably, the starter motor is no longer needed. That's why the engine could accelerate without the starter motor. If the engine still required the starter to accelerate, it wouldn't be in a self-sustaining state; if it cannot accelerate on its own, it isn't self-sustaining; and if it stalls, it's not maintaining operation.

3. The purpose of variable inlet guide vanes is to prevent compressor blade stall at what engine operating condition?

A. Increase Fuel Flow

B. Prevent Compressor Blade Stall At Low RPM

C. Increase Exhaust Velocity

D. Reduce Oil Consumption

Variable inlet guide vanes adjust the direction of the air entering the compressor to keep the airflow well-aligned with the rotor across different engine speeds. At low RPM, the compressor tends to stall because there isn't enough mass flow to support the demanded pressure rise, and a poorly directed flow can separate or surge. By changing the inlet vane angles, the air is steered to enter the compressor at the optimal angle, improving stability and preventing blade stall during idle and throttle changes. This function doesn't involve increasing fuel flow, changing exhaust velocity, or reducing oil consumption, so those options don't fit the purpose.

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4. In a high bypass turbofan engine, what is the function of the reverse thrust system?

A. To generate thrust during landing

B. Blocker doors divert cold stream air

C. To increase core pressure

D. To close the bypass duct

In a high bypass turbofan, the reverse thrust system uses the bypass airflow (the cold air around the engine core) to help slow the aircraft after landing. It accomplishes this by placing blocker doors in the bypass duct to block the normal forward flow and redirect that air forward through thrust-reverser cascades or vanes. The redirected air exits forward, creating a braking force opposite the aircraft's motion. This relies on diverting the cold bypass air, not on boosting core pressure, generating thrust during landing, or closing the bypass duct.

5. An aircraft with a TAS of 300 kts has a fuel burn of 3000 kg/hr. The specific air range as a ratio of distance travelled per tonne of fuel would be most correctly expressed as a ratio of

A. 100nm/Tonne

B. 30nm/Tonne

C. 1000nm/Tonne

D. 1nm/Tonne

Specific air range is how far you can travel for each unit of fuel burned. Here, you're flying at 300 knots, which means 300 nautical miles in one hour. The aircraft uses fuel at 3000 kg per hour, which is 3 tonnes per hour. To get distance per tonne, divide the distance per hour by the tonnes burned per hour: 300 nautical miles ÷ 3 tonnes = 100 nautical miles per tonne. Equivalently, distance per kilogram is 300 nm per 3000 kg = 0.1 nm/kg, and 0.1 nm/kg × 1000 kg/tonne = 100 nm/tonne. So the correct expression is 100 nautical miles per tonne.

6. How can warnings from the master warning system be cancelled?

A. Press the master warning/caution button

B. Switch off the aircraft battery

C. Toggle the avionics switch off

D. Ignore and continue flight

When a master warning is triggered, you cancel it by acknowledging it with the master warning/caution button. Pressing this button clears the warning light and stops the audible alert, letting you focus on diagnosing and addressing the underlying fault according to the checklist. It doesn't fix the problem by itself; it simply removes the immediate alert so you can proceed with the correct steps. Switching off the aircraft battery isn't an appropriate or safe way to cancel warnings, as it cuts power to essential systems. Turning off avionics might silence some displays but won't reliably clear the warning or preserve critical information you need to manage the situation. Ignoring the warning and continuing flight is unsafe because the alert exists to draw attention to a condition that requires action.

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7. Regarding hydroplaning and tyre pressure, which statement is correct?

A. Minimum hydroplaning speed is proportional to the square root of tyre pressure

B. Minimum hydroplaning speed is proportional to tyre pressure

C. Hydroplaning speed is independent of tyre pressure

D. Hydroplaning speed is inversely proportional to square root of tyre pressure

Hydroplaning starts when a layer of water builds between the tire and the surface and the tire loses contact with the runway. How easily that water layer can form is influenced by how stiff the tire is, which comes from its inflation pressure. A higher tire pressure makes the tire stiffer and reduces the contact patch, so water tends to get trapped more easily under the tread. To generate enough water pressure under the tire to lift it off the surface, you need more speed. This leads to a relationship where the minimum hydroplaning speed grows with the square root of the tyre pressure. In other words, increasing tire pressure raises the hydroplaning speed, but not linearly. That's why the correct statement says the minimum hydroplaning speed is proportional to the square root of tyre pressure.

8. Methods for defining waypoints entered by the crew into the FMC database include

A. Lat and long, place with bearing/dist, place with bearing and place with bearing

B. Lat and long only

C. Place with bearing and distance only

D. Bearing-only with distance

Entering a waypoint into the FMC can be done either with precise coordinates or by using a reference point and a defined direction and distance. Providing latitude and longitude gives an exact location that doesn't depend on any other fix. In contrast, you can create a new waypoint by selecting a known place (a reference fix) and specifying a bearing from that point, with or without a distance, to locate the new point along that line. This relative method is useful when you don't have exact coordinates but know the direction (bearing) from a known location and, if needed, how far along that bearing to go. That combination—exact coordinates along with several bearing-based methods from a reference place—captures all the typical ways pilots input user-defined waypoints into the FMC, which is why it's the best answer. The other options omit one of these entry methods, making them incomplete.

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9. Which statement best describes the behavior of air in a divergent duct at subsonic speeds?

A. Constant density, pressure rises, velocity falls

B. Density increases with velocity increases

C. Density decreases with pressure increase

D. Pressure falls with velocity increase

In a subsonic flow through a divergent duct, the cross-sectional area increases along the path, so the velocity must decrease to conserve mass (continuity: A·v = constant). With the velocity dropping, the kinetic energy term in Bernoulli's principle reduces, and for air at subsonic speeds the density changes are minimal, so the density can be treated as essentially constant. This means the static pressure must rise as velocity falls to keep the energy balance along the streamline. So the description of constant density with pressure rising and velocity falling aligns with how subsonic flow behaves in a divergent duct. Why this fits better than the others: if velocity were to increase in such a duct, Bernoulli would indicate a pressure drop, which isn't the case here. Density would not meaningfully rise with velocity in this subsonic, nearly incompressible scenario, and it wouldn't decrease in response to an increasing pressure in the same context.

10. When is a hot battery bus powered in a jet aircraft electrical system?

A. Only when a charged battery is installed in the aircraft

B. Only when the engine is running

C. Only when external power is connected

D. Only when the generator is online

A hot battery bus is kept energized by the aircraft's main battery, supplying essential systems when other power sources aren't available. It stays powered as long as the battery is connected and charged, so the presence of a charged battery is what lets it stay live. If there's no charged battery, the hot battery bus can't be energized, even if the engines are running or external power or generators are available. External power and generators feed other buses, but the hot battery bus relies on the battery voltage to stay on.

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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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