EASA PRINCIPLES OF FLIGHT 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. **What is the definition of Vne in aviation terms?**
   A. Vne Is The Never-Exceed Speed.
   B. Vne Is The Never-Exceed Speed; Exceeding It Can Cause Structural Damage Or Loss Of Control.
   C. Vne Is The Stall Speed.
   D. Vne Is The Minimum Controllable Speed.

2. **A leading-edge slat will delay stall, allowing a higher angle of attack before stall.**
   A. Only at high speed
   B. Only with flaps
   C. True
   D. False

3. **Oblique shock waves: The static temperature behind the shock is higher than in front.**
   A. True
   B. False
   C. Cannot be determined
   D. Only true at certain Mach numbers

4. **In the feathered position, the drag of the propeller is then minimized.**
   A. False
   B. True
   C. It becomes maximal
   D. It remains unchanged

5. **Which four factors primarily determine lift magnitude for a fixed-wing aircraft?**
   A. Wing area, air density, velocity, and angle of attack
   B. Wing span, engine power, altitude, temperature
   C. Aircraft color, surface roughness, humidity, ground speed
   D. Lift coefficient, drag coefficient, weight, thrust

6. **Describe the boundary layer and how laminar and turbulent layers differ in effect on drag and stall.**

   A. The boundary layer is the airflow adjacent to the surface; laminar has smooth flow with lower skin friction but can separate earlier; turbulent boundary layers adhere longer and delay stall but increase skin friction.

   B. The boundary layer is the region of turbulent flow only near wing tips.

   C. The boundary layer is the free stream beyond boundary effects; laminar boundary layer increases skin friction but prevents separation.

   D. The boundary layer is the atmosphere beyond the aircraft boundary, irrelevant to drag.

7. **Increasing camber generally increases lift at a given angle of attack but can increase drag at cruise.**

   A. Only at high speed

   B. Only with flaps

   C. False

   D. True

8. **Distinguish static stability and dynamic stability in the longitudinal axis?**

   A. Static stability is the initial tendency to return after a disturbance; dynamic stability is how the motion damps over time

   B. Dynamic stability is the initial tendency to return; static stability is how the motion damps over time

   C. Static stability relates to the lateral axis

   D. Dynamic stability is the instantaneous response only

9. **On a large transport aeroplane, the auto-slat system**

   A. Extends the slats automatically when a certain value of angle of attack is exceeded

   B. Retracts the slats automatically when a certain value of angle of attack is exceeded

   C. Keeps slats fixed

   D. Extends slats only on takeoff

10. Which statement about center of gravity location is correct?

A. Forward CG decreases stability; aft CG increases elevator effectiveness

B. CG location has no effect on stability

C. Forward CG increases longitudinal stability and controllability margins but reduces elevator effectiveness; aft CG improves maneuverability but reduces stability and stall margin

D. CG only affects fuel efficiency

Answers

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

Explanations

1. What is the definition of Vne in aviation terms?

A. Vne Is The Never-Exceed Speed.

B. Vne Is The Never-Exceed Speed; Exceeding It Can Cause Structural Damage Or Loss Of Control.

C. Vne Is The Stall Speed.

D. Vne Is The Minimum Controllable Speed.

Vne is the never-exceed speed—the red-line limit for normal flight. It marks the maximum airspeed you should not exceed because going faster can push the airframe beyond its design stresses, leading to structural damage or loss of control. That safety warning is why the best answer includes both the idea of a maximum speed and the consequence of exceeding it. The other options mix up what Vne represents: stall speed is a much lower speed related to lift, and minimum controllable speed refers to a different flight limit related to controllability, not a red-line speed.

2. A leading-edge slat will delay stall, allowing a higher angle of attack before stall.

A. Only at high speed

B. Only with flaps

C. True

D. False

A leading-edge slat increases the wing's maximum lift capability by shaping the airflow at high angles of attack. It creates a gap (slot) that lets high-energy air flow from below the wing to the upper surface, energizing the boundary layer and delaying flow separation. Because the airflow remains attached longer, the wing can reach a higher angle of attack before stalling, raising the stall angle. This effect is valuable during takeoff and landing when the wing operates near stall speed, and it isn't limited to high speed or only when flaps are used. So the statement is true.

3. Oblique shock waves: The static temperature behind the shock is higher than in front.

A. True

B. False

C. Cannot be determined

D. Only true at certain Mach numbers

In an oblique shock, the airflow is decelerated and compressed, converting kinetic energy into internal energy. Since the flow is adiabatic, the stagnation (total) temperature stays the same across the shock. The normal component of the Mach number drops from before to after the shock, and because T0 = T [1 + (gamma-1)/2 M_n^2], a decrease in M_n behind the shock must be accompanied by an increase in static temperature T. Therefore, the static temperature behind the oblique shock is higher than ahead. This holds for any M1 > 1 with a calorically perfect gas like air, so it's not indeterminate and not limited to certain Mach numbers.

4. In the feathered position, the drag of the propeller is then minimized.

A. False

B. True

C. It becomes maximal

D. It remains unchanged

Feathering a propeller means turning the blades to align with the oncoming air so the angle of attack is very small. With the blades oriented edge-on to the flow, the aerodynamic resistance is greatly reduced, so the propeller produces as little drag as possible while coasting or under engine failure conditions. This is why feathering is used to minimize the drag from the propeller and improve gliding performance. It's not zero drag—there's still some residual drag from the hub, bearings, and minor aerodynamic losses—but it is as small as practically achievable. So the statement is true because feathering reduces the propeller's drag compared with other blade positions.

5. Which four factors primarily determine lift magnitude for a fixed-wing aircraft?

A. Wing area, air density, velocity, and angle of attack

B. Wing span, engine power, altitude, temperature

C. Aircraft color, surface roughness, humidity, ground speed

D. Lift coefficient, drag coefficient, weight, thrust

Lift is determined by the equation $L = 1/2\ \rho\ V^2\ S\ CL$, so the four factors that set its magnitude are the wing area (S), the air density (ρ), the velocity through the air (V), and the lift coefficient (CL). The lift coefficient is how effectively the wing converts inflow into lift, and in normal flight CL is governed mainly by angle of attack: increasing the angle strengthens the lift up to the point of stall. So increasing wing area adds more surface to generate lift, higher air density or faster speed increases the dynamic pressure acting on that surface, and a larger angle of attack raises CL and hence lift. Why the other options don't fit: engine power doesn't directly determine the instantaneous lift, and while altitude or temperature affect air density, they aren't four direct determinants of lift themselves. Choices including surface roughness, color, humidity, or ground speed likewise don't set the lift magnitude in the same direct way. The set that captures the essential factors is wing area, air density, velocity, and angle of attack (through CL).

6. Describe the boundary layer and how laminar and turbulent layers differ in effect on drag and stall.

A. The boundary layer is the airflow adjacent to the surface; laminar has smooth flow with lower skin friction but can separate earlier; turbulent boundary layers adhere longer and delay stall but increase skin friction.

B. The boundary layer is the region of turbulent flow only near wing tips.

C. The boundary layer is the free stream beyond boundary effects; laminar boundary layer increases skin friction but prevents separation.

D. The boundary layer is the atmosphere beyond the aircraft boundary, irrelevant to drag.

The boundary layer is the thin layer of air right next to the aircraft surface where viscosity matters and the air velocity rises from zero at the surface to the free-stream value a short distance away. When that layer is laminar, the flow is smooth and orderly, which means relatively low skin-friction drag. But with an adverse pressure gradient (as you tilt for more lift), a laminar boundary layer can separate from the surface sooner, creating a bigger wake and a quicker loss of lift. If the boundary layer is turbulent, the motion near the wall is chaotic and mixed, which increases skin-friction drag because of the higher energy and momentum exchange near the surface. However, the turbulent layer has more momentum transfer toward the wall, helping the flow stay attached to the surface under stronger adverse pressure gradients. That keeps lift available longer and delays stall, even though the overall drag is higher due to the turbulence. So, laminar boundary layers give lower drag but can separate earlier and reduce lift sooner, while turbulent boundary layers produce more drag but resist separation and delay stall.

7. Increasing camber generally increases lift at a given angle of attack but can increase drag at cruise.

A. Only at high speed

B. Only with flaps

C. False

D. True

Increasing camber means the wing's surface is more curved, which strengthens the downward deflection of airflow for a given angle of attack. That stronger deflection creates a larger pressure difference between the upper and lower surfaces, so the lift coefficient rises at the same angle of attack. Drag tends to rise as lift rises because of induced drag, which increases roughly with the square of lift. So at the same angle of attack, more camber generally means more lift and more drag. At cruise, where you usually balance weight with lift, keeping the angle of attack fixed while increasing camber will increase drag. If you instead adjust the angle of attack to keep lift the same, drag may not rise as much, but the general effect described is accurate, making the statement true.

8. Distinguish static stability and dynamic stability in the longitudinal axis?

A. Static stability is the initial tendency to return after a disturbance; dynamic stability is how the motion damps over time

B. Dynamic stability is the initial tendency to return; static stability is how the motion damps over time

C. Static stability relates to the lateral axis

D. Dynamic stability is the instantaneous response only

In the longitudinal axis, the key distinction is how the aircraft responds initially versus how it behaves over time after a disturbance. Static stability is about the immediate tendency to return to the original trim position after a disturbance in pitch. If the aircraft has positive static stability, a small nose-up or nose-down disturbance will prompt a restoring moment that tends to bring the nose back toward trim right away. Dynamic stability, on the other hand, describes the motion as time passes after that disturbance—whether the pitch oscillations die out (are damped), grow, or stay constant. So dynamic stability is about the time history of the response, not just the first instant. Thus the correct understanding is that static stability is the initial tendency to return, while dynamic stability is how the motion evolves and damps over time. The other statements misstate either the order of these concepts, apply them to the wrong axis, or limit dynamic stability to an instantaneous reaction.

9. On a large transport aeroplane, the auto-slat system

A. Extends the slats automatically when a certain value of angle of attack is exceeded

B. Retracts the slats automatically when a certain value of angle of attack is exceeded

C. Keeps slats fixed

D. Extends slats only on takeoff

Leading-edge slats are used to increase lift at low speed and high angle of attack, which helps with takeoff performance and stall margins. An auto-slat system on a large transport airplane is arranged to deploy these slats automatically when the aircraft is in takeoff configuration, providing extra lift right when it's most needed. Once the aircraft accelerates and climbs, the slats are retracted to reduce drag and improve cruise efficiency. This behavior matches extending slats only on takeoff. Why the other ideas aren't right: extending slats in response to a high angle of attack would imply automatic deployment in flight phases other than takeoff, which isn't how this system is described here. Retracting slats due to a high angle of attack would reduce lift when you actually need it, which isn't desirable. Keeping slats fixed ignores the auto-slat feature entirely.

10. Which statement about center of gravity location is correct?

A. Forward CG decreases stability; aft CG increases elevator effectiveness

B. CG location has no effect on stability

C. Forward CG increases longitudinal stability and controllability margins but reduces elevator effectiveness; aft CG improves maneuverability but reduces stability and stall margin

D. CG only affects fuel efficiency

Center of gravity position dictates how firmly the aircraft behaves in pitch and how much elevator is needed to change that pitch. When the CG is forward, the airplane has a stronger nose-down restoring tendency after any disturbance, giving greater longitudinal stability. That same forward placement means the tail must work harder to balance the forward weight, so for a given elevator deflection the pitching moment about the center of gravity is smaller, making elevator effectiveness (the ability of the elevator to produce a pitch change) reduced. In contrast, moving the CG toward the rear decreases the restoring forces, so maneuverability and responsiveness improve, but stability and stall margins erode. So the statement that a forward CG increases longitudinal stability and control margins while reducing elevator effectiveness, and that an aft CG improves maneuverability but reduces stability and stall margin, accurately describes the relationships.

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://easaprinciplesofflight.examzify.com

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