MESA Entrance Practice Exam (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. If the probability of rain tomorrow is 0.25, what are odds in favor?

A. 3:1

B. 1:3

C. 1:4

D. 4:1

2. Which acronym expands to Passenger?

A. Passenger

B. PAX

C. Pilot in Command

D. Portable Oxygen Bottle

3. The sum of interior angles of a hexagon (n=6) is (n-2)×180 degrees. Find the sum.

A. 540

B. 900

C. 600

D. 720

4. If a car accelerates uniformly from 0 to 60 mph in 10 seconds, what is the average acceleration?

A. 0.6 mph per second

B. 1.0 mph per second

C. 10 mph per second

D. 6 mph per second

5. WT stands for which term?

A. Weather

B. Visual Service Indicator

C. Regular Reserve

D. Weight

6. ACM stands for which role in crew operations?

A. Aircraft

B. AED

C. Additional Crew Member

D. American Airlines

7. For the linear function y = 2x + 1, what is y when x = -3?

A. -4

B. -6

C. -3

D. -5

8. The circumference of a circle is 2πr. If r = 5, what is the circumference?

A. 5π

B. 10π

C. 20π

D. 2π

9. Simplify the expression 3(a - 4) + 2a.

A. 5a - 12

B. 5a - 4

C. 3a - 12

D. 8a - 12

10. VSI stands for which term?

A. Weather

B. Regular Reserve

C. Visual Service Indicator

D. Unaccompanied Minor

Answers

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

Explanations

1. If the probability of rain tomorrow is 0.25, what are odds in favor?

A. 3:1

B. 1:3

C. 1:4

D. 4:1

Odds in favor compare how likely the event is to happen versus not happen. It's the ratio p to 1−p. With a 0.25 chance of rain, the odds in favor are 0.25 : 0.75, which simplifies to 1 : 3. So rain is three times less likely than no rain, and the odds in favor are 1 to 3. Remember, this is different from probability (which is 0.25 for rain); odds express a relative likelihood between the event and its complement.

2. Which acronym expands to Passenger?

A. Passenger

B. PAX

C. Pilot in Command

D. Portable Oxygen Bottle

In aviation, shorthand terms are used to convey information quickly, especially about people on board. PAX is the abbreviation you'll see on manifests, seating charts, and crew communications to refer to people who are traveling—the passengers. So the expansion is Passenger (singular) or Passengers (plural). The other options aren't related to this term: the full word "Passenger" isn't an acronym, Pilot in Command is typically abbreviated PIC, and Portable Oxygen Bottle is abbreviated POB.

3. The sum of interior angles of a hexagon (n=6) is (n-2)×180 degrees. Find the sum.

A. 540

B. 900

C. 600

D. 720

The sum of interior angles for any polygon can be found by triangulating it: a polygon with n sides can be divided into (n−2) triangles, and each triangle contributes 180 degrees. For a hexagon, n is 6, so you can split it into 4 triangles. Therefore, the total is 4 × 180 = 720 degrees. This matches the hexagon's interior angle sum. The other numbers correspond to polygons with different numbers of sides (for example, a pentagon gives 540, a heptagon gives 900), so they don't fit this shape.

4. If a car accelerates uniformly from 0 to 60 mph in 10 seconds, what is the average acceleration?

A. 0.6 mph per second

B. 1.0 mph per second

C. 10 mph per second

D. 6 mph per second

Acceleration is how quickly velocity changes. The average acceleration over a time interval equals (final velocity minus initial velocity) divided by the time taken. Here, starting from rest and reaching 60 mph in 10 seconds gives a change of 60 mph over 10 s. 60 ÷ 10 = 6, so the average acceleration is 6 mph per second. That means the speed increases by 6 mph each second. The other options would imply different total increases over the 10-second interval (for example, 0.6 mph/s would yield only 6 mph in 10 s, 1.0 mph/s would yield 10 mph in 10 s, and 10 mph/s would yield 100 mph in 10 s).

5. WT stands for which term?

A. Weather

B. Visual Service Indicator

C. Regular Reserve

D. Weight

This item tests understanding of common abbreviations for physical quantities, specifically what WT stands for. WT is used as shorthand for weight—the force exerted by gravity on an object. Weight is different from mass: mass is the amount of matter in an object, while weight depends on the gravitational pull and is measured in units like pounds-force or newtons. In many contexts, WT appears as a label or field indicating how heavy something is, which is why weight is the best choice here. The other options don't fit typical uses of WT: weather is usually abbreviated as Wx or Weather; a visual service indicator is abbreviated VSI; a regular reserve would not be denoted WT.

6. ACM stands for which role in crew operations?

A. Aircraft

B. AED

C. Additional Crew Member

D. American Airlines

In crew operations, acronyms are used to label specific roles on the flight team. ACM stands for Additional Crew Member, which refers to a person brought in to support the flight crew, often to cover rest periods or provide extra hands on long flights. The word "Additional" signals that this person is extra to the primary crew, "Crew" points to the on-board team, and "Member" identifies an individual. The other terms don't fit a crew role: Aircraft is the vehicle, AED is a medical device, and American Airlines is the airline, not a crew position.

7. For the linear function y = 2x + 1, what is y when x = -3?

A. -4

B. -6

C. -3

D. -5

When evaluating a linear function at a given x, you substitute that x into the expression and simplify. For y = 2x + 1, plug in x = -3: y = 2(-3) + 1. Multiply to get -6, then add 1 to get -5. So the y-value is -5, the only output for that input. The other numbers come from common slips, like forgetting the +1 or mishandling the arithmetic, but the correct substitution gives -5.

8. The circumference of a circle is 2πr. If r = 5, what is the circumference?

A. 5π

B. 10π

C. 20π

D. 2π

Using the circumference formula C = 2πr. With radius r = 5, C = 2π × 5 = 10π. So the circumference is ten pi. This also fits the alternative form C = πd with diameter d = 2r, giving C = π(10) = 10π. The other results would come from different radii (for example, 5π would come from a radius of 2.5, 20π from a radius of 10, and 2π from a radius of 1).

9. Simplify the expression 3(a - 4) + 2a.

A. 5a - 12

B. 5a - 4

C. 3a - 12

D. 8a - 12

This question tests applying the distributive property and then combining like terms. Distribute the 3 across the parentheses: 3(a - 4) becomes 3a - 12. Then add the remaining 2a to that result: 3a - 12 + 2a. Now combine the like terms a: 3a + 2a = 5a, leaving the -12 as a constant. So the expression simplifies to 5a - 12. The -12 comes from multiplying 3 by -4 and stays there, while the a terms combine to give 5a. If the result lacks the -12 or the 2a term, it wouldn't match the original expression (for example, 5a - 4 would be missing the -12, 3a - 12 would be missing the +2a, and 8a - 12 would miscount the a terms).

10. VSI stands for which term?

A. Weather

B. Regular Reserve

C. Visual Service Indicator

D. Unaccompanied Minor

Interpreting acronyms by what they describe is key here. VSI is best understood as Visual Service Indicator, a term that refers to a display or sign used to convey service status at a glance. That aligns with the idea of a visual cue that communicates whether service is available or in progress. Weather, Regular Reserve, and Unaccompanied Minor describe concepts far removed from signaling service status. Weather is about atmospheric conditions, Regular Reserve is a financial term, and Unaccompanied Minor refers to a passenger category. None of those imply a visual cue for service, so Visual Service Indicator is the term that fits the notion of a status indicator seen by people.

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://mesaentrance.examzify.com

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