FAA Weather Observation 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. Which of the following is NOT a required element for a reported wind shift?

A. Speed greater than 10 knots

B. Change in direction of 45° or more

C. Direction consistent for more than 5 minutes

D. Change occurs within 15 minutes

2. What does an obscuration represent in terms of sky visibility?

A. Visible

B. Partially hidden

C. Completely hidden

D. Hiding the sun

3. If more than one obscuration is occurring at the same time, they should be entered in which order?

A. Their beginning

B. Decreasing dominance

C. Increasing dominance

D. Intensity

4. What would the coding be for "7/8ths 2, 1/8th 1"?

A. 2SM; RMK VIS SW 1

B. 2SM

C. 1/4th 3/4

D. 1/2SM; RMK VIS E-SE 3/4 W-NW 1/4

5. Which criteria need to be satisfied for variable visibility to be reported?

A. Visibility is less than 3 miles

B. Visibility is between 2 and 4 miles

C. Visibility is rapidly increasing and decreasing by 1/2 mile or more

D. Visibility changes by 1 mile or more

6. What are the designators used for routine and unscheduled aviation weather observations?

A. METAR and TAF

B. METAR and SPECI

C. SPECI and TAF

D. METAR and AIRMET

7. Wet- and dry-bulb thermometers are read to the nearest what?

A. 0.5 degrees

B. 0.2 degrees

C. 0.1 degrees

D. 1 degree

8. Which of the following is never reported as a ceiling?

A. A broken layer of clouds

B. A layer over fog that hides more than half the sky

C. A layer of fog hiding 7/8 of the sky

D. Vertical visibility into precipitation hiding the entire sky

9. When recording sporadic wind conditions in METAR reports, which format applies to a variable direction that indicates calm conditions?

A. 25001KT

B. 25002KT

C. 00000KT

D. No Wind

10. What should be recorded in the METAR report if the RVR for runway 06 left shows 1000 feet but the 10-minute readout is not functioning?

A. Column 8: R06L/1000; column 14: nothing required

B. Column 8: nothing required; column 14: RVRNO

C. Column 8: R06L/VR1000FT; column 14: RVRNO

D. Column 8: nothing required; column 14: nothing required

Answers

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

Explanations

1. Which of the following is NOT a required element for a reported wind shift?

A. Speed greater than 10 knots

B. Change in direction of 45° or more

C. Direction consistent for more than 5 minutes

D. Change occurs within 15 minutes

For a reported wind shift to be valid, certain criteria must be met. One of these criteria is a change in wind direction of 45 degrees or more, which indicates a significant shift in wind patterns. Additionally, the change must occur within a relatively quick timeframe—specifically, within 15 minutes—to be considered meaningful and relevant for operational purposes. Lastly, when it comes to speed, a change that exceeds 10 knots is required to ensure that the shift is not just a minor fluctuation but rather a notable change that could impact weather conditions and flight operations. In this context, the option that specifies a direction consistent for more than 5 minutes does not serve as a requirement for reporting a wind shift. While maintaining consistent wind direction over a period can provide valuable context, it is not a mandatory element for formally recognizing that a wind shift has occurred. Therefore, this choice highlights an unnecessary condition within the parameters of what constitutes a wind shift, making it the correct answer for identifying what is NOT required when reporting such a shift.

2. What does an obscuration represent in terms of sky visibility?

A. Visible

B. Partially hidden

C. Completely hidden

D. Hiding the sun

An obscuration in weather terminology refers to conditions where visibility is significantly impaired, often due to phenomena like fog, smoke, rain, or snow. When an obscuration is present, it usually means that the view of the sky (and thus conditions for flight, observation, etc.) is severely impacted. The correct choice indicates that when visibility is described as being obscured, it is completely hidden from view. This means that pilots or observers cannot see the sky at all, which can have serious implications for flying, as it affects the ability to navigate using visual references. Other options describe varying degrees of visibility, such as being visible or partially hidden, which do not accurately capture the essence of an obscuration. Obscurations imply a total blockage of sight, making the correct interpretation crucial for safety and operational awareness in aviation.

3. If more than one obscuration is occurring at the same time, they should be entered in which order?

A. Their beginning

B. Decreasing dominance

C. Increasing dominance

D. Intensity

When multiple obscurations, such as fog, haze, or smoke, are occurring simultaneously, the correct approach is to enter them in order of decreasing dominance. This means that the most significant obscuration impacting visibility should be recorded first. The reasoning behind this choice is to provide a clear and effective representation of the conditions experienced at the observation location. By prioritizing the more impactful obscuration, it ensures that anyone reading the observation report can easily understand which factor primarily affects visibility at that moment. For example, if heavy fog is present with light smoke, indicating the fog first provides a more accurate picture of the most critical weather condition affecting navigation and safety. This method helps pilots and other aviation professionals assess the weather more quickly and accurately, which is vital for safe decision-making. Entering obscurations based on their intensity or any other characteristic could lead to ambiguity or confusion, potentially compromising safety and situational awareness. Therefore, the guideline for reporting obscurations emphasizes the importance of the order based on their decreasing dominance.

4. What would the coding be for "7/8ths 2, 1/8th 1"?

A. 2SM; RMK VIS SW 1

B. 2SM

C. 1/4th 3/4

D. 1/2SM; RMK VIS E-SE 3/4 W-NW 1/4

The coding for visibility in meteorological reports often uses a specific format to convey information about horizontal visibility. "7/8ths 2, 1/8th 1" indicates that there are obstructions to visibility in terms of fractions of a mile. In this context, "7/8ths" means that visibility is generally clear for 2 statute miles (SM), while "1/8th" indicates an obstruction in the visibility for another 1 statute mile. The code "2SM; RMK VIS SW 1" accurately captures this essence where "2SM" reflects the general visibility condition, and the remark "RMK VIS SW 1" indicates the visibility condition in the southwest direction, highlighting the additional 1 mile of visibility obstruction. Each component of this message provides crucial information for pilots and air traffic control, ensuring they are aware of the visibility conditions specific to various sectors. This level of detail is necessary for safe flight operations, as it informs pilots of any potential limitations due to visibility, which is vital for navigation and landing approaches.

5. Which criteria need to be satisfied for variable visibility to be reported?

A. Visibility is less than 3 miles

B. Visibility is between 2 and 4 miles

C. Visibility is rapidly increasing and decreasing by 1/2 mile or more

D. Visibility changes by 1 mile or more

Variable visibility is specifically reported when visibility fluctuates significantly within a given range. The correct criteria for reporting variable visibility are satisfied when visibility is reported as being less than a predetermined distance for at least the lower threshold of concern. In this case, the choice indicating that visibility is less than 3 miles is correct because it aligns with the meteorological criteria that establish the necessity of reporting such conditions. When visibility is below 3 miles, it signals to pilots and other aviation stakeholders that there could be significant challenges in navigation and safety. The parameters for "variable visibility" typically focus on the occurrence of visibility that can fall from acceptable to less favorable ranges, prompting a need for reporting to ensure situational awareness for aircraft operations. Thus, reporting visibility below 3 miles provides critical information regarding changing weather conditions and potential hazards in the airspace, warranting that such measurements should indeed be documented in a timely manner. The other options imply less-defined ranges or criteria that do not meet the standards necessary for reporting variable conditions, thus making them unsuitable for this specific role in aviation weather observations.

6. What are the designators used for routine and unscheduled aviation weather observations?

A. METAR and TAF

B. METAR and SPECI

C. SPECI and TAF

D. METAR and AIRMET

METAR and SPECI are the correct designators for routine and unscheduled aviation weather observations. METAR is the routine aviation weather report, typically issued at regular intervals and providing current weather conditions such as temperature, wind direction and speed, visibility, and significant weather phenomena. It creates a consistent and reliable set of data that pilots and air traffic controllers can utilize for flight planning and safety. SPECI is the special weather report that is issued when there are significant changes in weather conditions that could affect aviation operations, such as sudden shifts in wind, visibility, or the occurrence of severe weather phenomena. This report provides timely updates in situations that could arise between routine METAR broadcasts, ensuring that aviation stakeholders have access to the latest critical weather information. In contrast, TAF (Terminal Aerodrome Forecast) is a weather forecast specifically for a defined area around an airport, focusing on expected weather conditions over a period of time, and AIRMET provides information on significant weather phenomena that may affect aircraft but does not serve as an observation format itself. These distinctions emphasize the specific roles METAR and SPECI play in the data used for immediate and routine aviation weather conditions.

7. Wet- and dry-bulb thermometers are read to the nearest what?

A. 0.5 degrees

B. 0.2 degrees

C. 0.1 degrees

D. 1 degree

Wet- and dry-bulb thermometers are designed to measure temperature with a high degree of accuracy. They are typically read to the nearest tenth of a degree (0.1 degrees). This level of precision is important for applications such as calculating relative humidity, which requires accurate temperature readings to be effective. The wet-bulb thermometer measures the temperature of evaporative cooling, while the dry-bulb thermometer measures the ambient air temperature. The combination of both readings allows for a more precise determination of moisture content in the air, which is critical in meteorology and various aviation operations. The focus on tenths of a degree ensures that these significant measurements can capture small variations that could affect weather predictions and observations.

8. Which of the following is never reported as a ceiling?

A. A broken layer of clouds

B. A layer over fog that hides more than half the sky

C. A layer of fog hiding 7/8 of the sky

D. Vertical visibility into precipitation hiding the entire sky

The correct answer pertains to the definition of ceilings in aviation weather reporting, specifically regarding how they are determined based on cloud layers and visibility conditions. A ceiling is defined as the height above the ground of the lowest layer of clouds or obscuring phenomena that is reported as being broken (more than 5/8 of the sky covered) or overcast (more than 7/8 of the sky covered). In this question, the scenario presented in the choice describes a layer of fog that is hiding 7/8 of the sky. While this condition obscures visibility, fog itself does not qualify as a cloud layer in terms of ceiling reporting. The presence of fog does not create a ceiling because ceilings are defined with respect to clouds, and fog lacks the defined structure associated with cloud layers. In contrast, a broken layer of clouds or a layer over fog that obscures a significant portion of the sky are both directly related to cloud cover and can be reported as ceilings. Moreover, vertical visibility into precipitation that hides the entire sky is also reported as a ceiling because it indicates the extent of the visibility above the ground. Thus, the choice indicating a layer of fog hiding 7/8 of the sky does not constitute a ceiling under FAA regulations.

9. When recording sporadic wind conditions in METAR reports, which format applies to a variable direction that indicates calm conditions?

A. 25001KT

B. 25002KT

C. 00000KT

D. No Wind

In METAR reports, the notation for wind is crucial for conveying precise information about current conditions. When indicating calm conditions with a variable direction of wind, the correct format utilizes a notation that signifies no significant wind. The format "00000KT" explicitly conveys that the wind is calm, meaning there is no wind blowing or it is below the threshold of reporting, which is typically less than 3 knots. The "00000KT" format breaks down as follows: the first three zeros represent the wind direction in degrees, which in this case indicates a calm state, while the second part, also zeroes, indicates the wind speed and is measured in knots. This format effectively communicates to pilots and meteorologists that there is no appreciable wind affecting operations. In contrast, other formats like "25001KT" and "25002KT" represent winds coming from a specific direction (250 degrees) at a very light speed (1 or 2 knots, respectively), which does not correctly reflect calm conditions. The option “No Wind,” while intuitive, is not a standardized representation used in METAR reports; thus, it cannot be relied upon in official communications.

10. What should be recorded in the METAR report if the RVR for runway 06 left shows 1000 feet but the 10-minute readout is not functioning?

A. Column 8: R06L/1000; column 14: nothing required

B. Column 8: nothing required; column 14: RVRNO

C. Column 8: R06L/VR1000FT; column 14: RVRNO

D. Column 8: nothing required; column 14: nothing required

In this scenario, when the Runway Visual Range (RVR) for runway 06 left indicates a value of 1000 feet but the 10-minute readout is unavailable, the correct procedure is to record something in the report to signify the situation regarding the RVR. Recording "RVRNO" in column 14 indicates that the RVR is not operational, providing crucial information for those interpreting the METAR report. This helps ensure that pilots and other users of the data are aware of the status and can make informed decisions regarding runway conditions. In column 8, since the 10-minute RVR readout is not functioning, there is no requirement to provide a specific RVR value, as the lack of a valid 10-minute mean could mislead users into thinking the reported value is reliable and current. This combination effectively communicates both the existing RVR condition and the operational status of the measuring equipment, fulfilling the reporting standards required for safety in aviation operations.

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://faaweatherobservation.examzify.com

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