FAA Weather Observation Practice Exam (Sample)

Study Guide

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Questions

1. What is the maximum number of layers that can be coded in a manual observation?

A. 4

B. 5

C. 6

D. 7

2. What is the definition of a squall?

A. A sudden drop in temperature

B. An increase in wind speed of 16 knots

C. A gentle breeze with rain

D. A steady rainfall without wind changes

3. The height of all layers, including the ceiling layer, is recorded in terms of feet above what reference point?

A. The ground

B. The surface

C. The observer's location

D. Sea level

4. What is the sky cover of a layer of smoke aloft that covers 8/8 of the sky?

A. 6 eighths

B. 7 eighths

C. 8 eighths

D. 9 eighths

5. Under what visibility conditions would moderate snow not be reported when other phenomena are present?

A. 0SM

B. 1/2SM

C. 1/4SM

D. 3/4SM

6. What would you do if the RVR equipment were out of service but visibility was still being reported?

A. Continue to report RVR with estimated values

B. Declare RVR unavailable in the remarks section

C. Coded RVR as zero in all reports

D. RVR must be omitted completely

7. What contraction is used to indicate a completely obscured sky condition?

A. OVC

B. VV

C. BKN

D. SCT

8. What is the typical frequency for comparing two aneroid instruments used to determine altimeter settings?

A. Every hour

B. Each time the altimeter setting is determined

C. Once a week

D. Once a month

9. What should be recorded in column 9 if blowing dust is reducing visibility to 5/8 statute mile?

A. BLDU

B. DU

C. DS

D. +DS

10. Which element is recorded immediately before sky condition in a METAR/SPECI report?

A. altimeter

B. present weather

C. visibility

D. temperature and dew point

Answers

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

Explanations

1. What is the maximum number of layers that can be coded in a manual observation?

A. 4

B. 5

C. 6

D. 7

The maximum number of layers that can be coded in a manual observation is six. In aviation meteorology, particularly within the METAR reporting system, weather observers document cloud layers by specifying their heights, types, and coverage. The regulation allows for the reporting of up to six layers to capture a comprehensive overview of the sky conditions. This includes clouds of various types and heights, which provide essential information for pilots and air traffic controllers regarding visibility and flight safety. While the coding system is carefully structured, the limit of six ensures that observers can include significant layers that contribute to the weather picture without overwhelming the report with too many data points. It maintains a balance between detail and clarity in meteorological observations. Therefore, the correct interpretation of manual observations in the context of aviation weather reporting confirms that six layers can be effectively communicated, adhering to established guidelines.

2. What is the definition of a squall?

A. A sudden drop in temperature

B. An increase in wind speed of 16 knots

C. A gentle breeze with rain

D. A steady rainfall without wind changes

A squall is defined as a sudden and brief increase in wind speed, specifically characterized by an increase of at least 16 knots that lasts for a duration of at least one minute. This phenomenon is often associated with thunderstorms or rapidly developing weather systems, where strong winds are a significant feature. The sharp increase in wind speed can often be accompanied by precipitation, turbulence, and changes in visibility. In this context, the other options do not accurately describe a squall. A sudden drop in temperature, while perhaps indicative of changing weather, does not define the wind characteristics that identify a squall. Likewise, a gentle breeze with rain or a steady rainfall without wind changes does not capture the sudden and notable gust aspect that is central to understanding a squall. Thus, the definition focusing on a specific increase in wind speed is what makes it correct in identifying a squall.

3. The height of all layers, including the ceiling layer, is recorded in terms of feet above what reference point?

A. The ground

B. The surface

C. The observer's location

D. Sea level

The height of all layers, including the ceiling layer, is recorded in terms of feet above the surface. This reference point is the actual ground level at the observation site and is critical for accurately measuring and reporting cloud heights and other atmospheric phenomena. By using the surface as the reference, the measurements are consistent regardless of variations in terrain elevation, which can influence how high clouds or weather phenomena appear to an observer. Using the surface level allows for a standardized way of reporting weather conditions that can easily be understood and utilized for aviation and other operational purposes. This approach ensures that pilots and meteorologists have a clear understanding of the atmospheric conditions they are working with in relation to where they are situated on the earth's surface.

4. What is the sky cover of a layer of smoke aloft that covers 8/8 of the sky?

A. 6 eighths

B. 7 eighths

C. 8 eighths

D. 9 eighths

The sky cover of a layer of smoke aloft that covers 8/8 of the sky indicates a complete and uniform coverage. In aviation weather observations, sky cover is typically reported in eighths, which measure the amount of the sky obscured by cloud or other meteorological phenomena. When smoke covers the entire sky, it is classified as 8/8, which means that 8 sections out of a total of 8 are filled. This designation communicates that there is no visible clear sky, and conditions are completely obscured by the smoke layer. The other options do not accurately represent a complete coverage. For instance, selections that suggest fewer than 8/8 imply that some part of the sky remains clear, which is not the case here. A measurement like 9 eighths is not possible, as there cannot be more than total coverage in the context of sky observations. Thus, the correct characterization of the smoke covering the entire sky is indeed reflected by the answer of 8 eighths.

5. Under what visibility conditions would moderate snow not be reported when other phenomena are present?

A. 0SM

B. 1/2SM

C. 1/4SM

D. 3/4SM

Moderate snow is reported in accordance with visibility criteria; however, if visibility is at or below 3/4 statute miles and other significant weather phenomena are present, moderate snow may not be indicated. In this context, when visibility is 3/4SM, it typically means that the snow could be heavy enough that it significantly reduces visibility, but not to such an extent that it requires reporting as moderate snow. The reporting criteria consider both the intensity of the snowfall and the visibility resulting from it. Because of this interplay, when other weather phenomena are present alongside moderate snow, and visibility exceeds certain thresholds, the snowfall may not be reported in the same manner. The visibility must be substantially impaired to warrant reporting, and if it is somewhat compromised but still assessable, like at 3/4SM, reporting might omit more detailed descriptions of snow intensity. Therefore, in cases where visibility is at 3/4SM, it indicates that while there may be snowfall, the conditions may not meet the threshold for explicitly stating moderate snow in conjunction with other weather phenomena.

6. What would you do if the RVR equipment were out of service but visibility was still being reported?

A. Continue to report RVR with estimated values

B. Declare RVR unavailable in the remarks section

C. Coded RVR as zero in all reports

D. RVR must be omitted completely

In the scenario where the RVR (Runway Visual Range) equipment is out of service but visibility is being reported, the correct action is to declare RVR unavailable in the remarks section. This indicates to pilots and other users of the weather information that the standard RVR information cannot be provided due to equipment issues, which is crucial for safety. Reporting RVR values without functioning equipment can lead to misinformation; estimated values may not accurately reflect the conditions, and omitting RVR altogether could cause confusion about what information is available. Declaring it as unavailable maintains clarity and informs all parties that the RVR data cannot be relied upon at that time, thereby ensuring better situational awareness for those utilizing the information for flight planning and operations.

7. What contraction is used to indicate a completely obscured sky condition?

A. OVC

B. VV

C. BKN

D. SCT

The contraction used to indicate a completely obscured sky condition is "VV," which stands for "vertical visibility." This term is particularly relevant in situations where the sky is so overcast or obscured by fog, haze, or other phenomena that the horizon cannot be defined from the ground, making it impossible to see any portion of the sky. Vertical visibility indicates how far upward one can see vertically through the obscuring layer, which is critical for pilots and meteorologists who require a clear understanding of cloud cover and conditions that might affect flying. In contrast, the other contractions represent different levels of cloud cover. "OVC" stands for overcast, which indicates that the sky is completely covered by clouds, but it does not imply any obstruction of visibility from a vertical perspective. "BKN" indicates broken clouds, meaning there are significant gaps in the cloud cover, while "SCT" signifies scattered clouds, implying that clouds are present but are not dominating the sky. Therefore, "VV" is the most appropriate answer for describing a situation where the sky is completely obscured to the point of requiring vertical visibility measurement.

8. What is the typical frequency for comparing two aneroid instruments used to determine altimeter settings?

A. Every hour

B. Each time the altimeter setting is determined

C. Once a week

D. Once a month

The typical frequency for comparing two aneroid instruments is each time the altimeter setting is determined. This practice is crucial for ensuring accuracy in altitude measurements, which can significantly impact flight safety. The altimeter setting is vital for pilots because it provides them with the necessary information to maintain the correct altitude during flight, helping to prevent incidents such as controlled flight into terrain. By comparing the readings of two aneroid instruments at each altimeter setting determination, any discrepancies can be identified and addressed immediately. This not only helps in maintaining the precision of the instruments but also ensures that they remain reliable over time. Regular comparisons serve as a form of calibration, reinforcing the integrity of the data received by pilots and air traffic control. In contrast, longer intervals like weekly or monthly checks would not be sufficient for the dynamic and highly variable conditions encountered in aviation. Regular adjustments and validations of altimeter settings are essential for safety and performance in the aviation environment.

9. What should be recorded in column 9 if blowing dust is reducing visibility to 5/8 statute mile?

A. BLDU

B. DU

C. DS

D. +DS

In situations where blowing dust affects visibility, the appropriate code to record is "DS," which stands for dust storm. This designation is specifically used when dust is raised by the wind, leading to significant reductions in visibility, as is the case when visibility drops to 5/8 statute mile. This code effectively communicates to meteorologists and pilots that the weather condition is specifically due to suspended dust particles, which is critical for safety and operational considerations. The context provided by the visibility condition (5/8 statute mile) confirms that the impact is more than trivial, warranting the classification of a visibility reduction due to dust. Other choices may refer to different weather phenomena or intensity levels, but "DS" is the correct term for documenting conditions where visibility is markedly impaired by blowing dust.

10. Which element is recorded immediately before sky condition in a METAR/SPECI report?

A. altimeter

B. present weather

C. visibility

D. temperature and dew point

In a METAR/SPECI report, the element recorded immediately before sky condition is present weather. This information provides essential context about current atmospheric conditions that may affect flight operations. It describes significant weather phenomena such as rain, snow, fog, and thunderstorms, which are crucial for pilots and air traffic controllers to understand the conditions they will encounter. The presence of weather phenomena is particularly important as it can influence visibility and overall safety in aviation. By placing present weather information directly before the sky condition, the report allows for a clear understanding of what visibility may be like in conjunction with the cloud cover and other sky conditions at that time. In the sequence of a METAR/SPECI report, present weather precedes visibility, which in turn is followed by sky condition, thereby emphasizing the comprehensive view of current weather that pilots and meteorologists need to account for when assessing flight readiness.