FAA Instrument Rating Written Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. **What does an "on glidepath" indication correspond to in specific terms?**

   A. A value of 10.

   B. A value of 8.

   C. A value of 11.

   D. A value of 12.

2. **When planning an IFR flight off established airways below 18,000 feet MSL using VOR navigation, what is the maximum distance between NAVAIDs?**

   A. 40 NM

   B. 80 NM

   C. 70 NM

   D. 60 NM

3. **What is the minimum crossing altitude at DBS VORTAC when flying a northbound IFR flight on V257?**

   A. 8,600 feet.

   B. 7,500 feet.

   C. 11,100 feet.

   D. 9,000 feet.

4. **Decode the excerpt from the Winds and Temperature Aloft Forecast (FB) for OKC at 39,000 feet.**

   A. Wind 130° at 50 knots, temperature - 58° C

   B. Wind 330° at 105 knots, temperature -58° C

   C. Wind 330° at 205 knots, temperature -58° C

   D. Wind 230° at 95 knots, temperature -60° C

5. **What does the AIRMET indicating CIG BELOW 010 imply for a flight route?**

   A. There will be icing in clouds below 10,000 feet MSL

   B. Visibility will be less than 3 statute miles until 15Z

   C. The area will have low ceilings before 15Z

6. What does the presence of runway centerline lights at night indicate?

A. You are on the centerline for your assigned runway.

B. You have lined up with the wrong runway.

C. You are too low on the approach.

D. You are cleared for a visual approach.

7. What is the minimum altitude for a northbound IFR flight on V257 at DBS VORTAC?

A. 7,500 feet

B. 8,600 feet

C. 11,100 feet

D. 10,500 feet

8. What type of navigation should be utilized if accuracy is critical during an instrument approach?

A. GPS only

B. NDB navigation

C. VOR navigation

D. ILS navigation

9. What occurs when winter weather warnings are issued?

A. Low visibility and high turbulence expected

B. Snow accumulation may exceed a certain amount within a specific time frame

C. Clear skies and calm winds are expected

D. Temperature inversions are predicted

10. The minimum safe altitude (MSA) for the VOR/DME or GPS-A at 7D3 is centered on which position?

A. DEANI intersection

B. WHITE CLOUD VOR/DME

C. MAJUB intersection

D. SOUTH VORTAC

Answers

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

Explanations

1. What does an "on glidepath" indication correspond to in specific terms?

A. A value of 10.

B. A value of 8.

C. A value of 11.

D. A value of 12.

The "on glidepath" indication typically corresponds to a specific value associated with the approach slope. In the context of an Instrument Landing System (ILS) or similar precision approach systems, such as a vertical guidance system, the values often refer to the relationship of the aircraft's altitude in relation to the ideal glide slope. In many systems, a value indicating that the aircraft is "on glidepath" will generally be represented by a normalized figure that confirms the aircraft is exactly where it needs to be vertically to maintain the proper approach to the runway. This precision is crucial for safe landings, especially in challenging weather conditions or low visibility. In practical terms, training focuses on recognizing these values and understanding their implications during an approach. The value of 10 is commonly established in various training materials and references as the threshold for an aircraft to be on the ideal glide slope, confirming an optimal altitude position in relation to the runway.

2. When planning an IFR flight off established airways below 18,000 feet MSL using VOR navigation, what is the maximum distance between NAVAIDs?

A. 40 NM

B. 80 NM

C. 70 NM

D. 60 NM

The correct answer is based on the regulations governing the use of VOR navigation during IFR flights. When planning an IFR flight off established airways below 18,000 feet MSL, the maximum allowable distance between VOR NAVAIDs is 80 nautical miles. This distance ensures adequate navigational coverage for aircraft, allowing pilots to maintain situational awareness and effectively track their routes using VOR stations. The requirement for keeping NAVAIDs within this maximum distance is crucial for safe navigation, especially in areas where terrain or weather might limit visibility. By adhering to this guideline, pilots can ensure they have reliable reference points for navigation and can make necessary adjustments during flight while under instrument flight rules. This allows for a greater margin of safety and helps prevent navigational errors in less structured airspace.

3. What is the minimum crossing altitude at DBS VORTAC when flying a northbound IFR flight on V257?

A. 8,600 feet.

B. 7,500 feet.

C. 11,100 feet.

D. 9,000 feet.

The minimum crossing altitude at a VORTAC for a specific route segment is critical for ensuring safe vertical separation from other traffic and terrain. For DBS VORTAC when flying northbound on the V257 airway, the minimum crossing altitude is established based on air traffic control regulations and the need to maintain safe altitudes over various terrain and obstacles in the vicinity. In this case, the correct answer of 8,600 feet has been set as the minimum crossing altitude to ensure that aircraft remain safely above any obstructions and in compliance with standard operating procedures for IFR flights. This altitude is designed to provide sufficient clearance above the ground and surrounding airspace while accommodating the vertical structure of the airspace above it. The other altitude options do not meet the requirements based on regulations for this specific airway and VORTAC operation. It's crucial for pilots to adhere to the published minimum altitudes, as they are established for safety and operational effectiveness within the air traffic control framework.

4. Decode the excerpt from the Winds and Temperature Aloft Forecast (FB) for OKC at 39,000 feet.

A. Wind 130° at 50 knots, temperature - 58° C

B. Wind 330° at 105 knots, temperature -58° C

C. Wind 330° at 205 knots, temperature -58° C

D. Wind 230° at 95 knots, temperature -60° C

To decode the Winds and Temperature Aloft Forecast (FB) for Oklahoma City (OKC) at 39,000 feet accurately, it's essential to understand how the format presents wind direction, wind speed, and temperature. In this context, the wind direction is represented by three digits (i.e., true north is 000, east is 090, south is 180, and west is 270) with wind speeds typically given in knots. Additionally, temperatures are often expressed in degrees Celsius with the values preceding a negative sign indicating that they are below zero. For the correct answer, the identified wind direction of 330°, linked with a wind speed of 105 knots, and a temperature of -58°C matches typical meteorological reporting standards for that elevation. Providing further context, a wind from 330° means the wind is blowing from the northwest towards the southeast at a speed of 105 knots, which is quite significant at altitude. The temperature of -58°C is consistent with high-altitude conditions, where temperatures can drop significantly. Understanding these elements helps in interpreting aviation weather forecasts accurately, ensuring that pilots can make informed decisions regarding flight planning and safety based on wind conditions and temperature at altitude.

5. What does the AIRMET indicating CIG BELOW 010 imply for a flight route?

A. There will be icing in clouds below 10,000 feet MSL

B. Visibility will be less than 3 statute miles until 15Z

C. The area will have low ceilings before 15Z

The AIRMET indicating CIG BELOW 010 specifically relates to cloud ceilings. This alert indicates that the ceiling is expected to be below 1,000 feet above mean sea level (MSL), which can significantly impact flight operations, particularly for VFR (Visual Flight Rules) flights. AIRMETs are designed to inform pilots of weather conditions that may affect safety, especially in the context of flying under instrument flight rules (IFR). In this case, a ceiling below 1,000 feet can lead to challenging conditions, as pilots may encounter low visibility and difficulty maintaining control of their aircraft based on visual references. The mention of "before 15Z" suggests that this condition is expected to persist until that time, further highlighting the potential for low ceilings in that area during that period. Understanding the implications of a low ceiling is crucial for flight planning and decision-making in aviation. The other options refer to aspects such as icing or visibility, which are not directly indicated by the specific AIRMET about cloud ceilings.

6. What does the presence of runway centerline lights at night indicate?

A. You are on the centerline for your assigned runway.

B. You have lined up with the wrong runway.

C. You are too low on the approach.

D. You are cleared for a visual approach.

The presence of runway centerline lights at night indicates that an aircraft is on the centerline for the assigned runway. These lights are typically white and are installed along the centerline of the runway, helping pilots maintain proper alignment during takeoff and landing. This is particularly vital during low visibility conditions, as it assists in ensuring that the aircraft is correctly positioned on the runway. When pilots see these lights while on approach or on the ground, it confirms they are aligned correctly and operating safely within the designated runway environment. Proper alignment is crucial for a safe and efficient landing or takeoff, as it minimizes the chances of veering off the runway. In contrast, the other options do not accurately reflect what the centerline lights signify. For example, lining up with the wrong runway or being too low on approach are situations that would not be indicated by the presence of centerline lights. Instead, those circumstances could be identified through visual references or specific guidance from air traffic control. Additionally, being cleared for a visual approach doesn't necessarily relate to the presence of centerline lights, as visual approaches can occur under various conditions and do not require specific runway lighting to indicate alignment.

7. What is the minimum altitude for a northbound IFR flight on V257 at DBS VORTAC?

A. 7,500 feet

B. 8,600 feet

C. 11,100 feet

D. 10,500 feet

The minimum altitude for a northbound IFR flight on V257 at DBS VORTAC is 8,600 feet. This altitude is assigned to ensure safe navigation above any obstacles and to provide a safe vertical separation from terrain or other air traffic in the area. When flying under IFR and navigating via jet routes or airways, specific altitude assignments are established in accordance with the aeronautical charts to maintain safety and efficiency in airspace. Each airway, including V257, has prescribed minimum altitudes that pilots must adhere to in order to ensure safe operations. The chosen minimum altitude of 8,600 feet corresponds to the requirements for that particular route segment and ensures compliance with the necessary vertical separation from the ground and potential obstructions. This altitude also reflects the transition from low altitude airspace to higher altitude airspace, which is typically required for flight at higher levels. Understanding these altitudes and their significance is crucial for pilots during flight planning and route navigation under instrument flight rules (IFR). It not only ensures compliance with regulations but also contributes to the overall safety of the flight operation.

8. What type of navigation should be utilized if accuracy is critical during an instrument approach?

A. GPS only

B. NDB navigation

C. VOR navigation

D. ILS navigation

When accuracy is critical during an instrument approach, the Instrument Landing System (ILS) navigation method is the most appropriate choice. ILS provides precise lateral and vertical guidance to pilots as they approach and land at an airport. This system utilizes two key components: the localizer, which provides horizontal guidance, and the glideslope, which offers vertical guidance. The localizer aligns the aircraft with the runway centerline, ensuring that the approach is as accurate as possible. The glideslope helps pilots maintain the correct descent path, enabling a stable approach even in low visibility conditions. The combination of these two signals allows for highly accurate navigation, which is essential during the critical phases of landing. While other navigation methods like GPS, NDB, and VOR do provide navigational assistance, they do not offer the same level of precision and guidance specific to instrument approaches as ILS does. GPS can be very accurate but relies on satellite signals, which can be affected by interference or outages. NDB and VOR navigation are less precise and usually involve broader lateral guidance, making them less suitable when high accuracy is required for safety during landing. This makes ILS the preferred choice for critical instrument approaches.

9. What occurs when winter weather warnings are issued?

A. Low visibility and high turbulence expected

B. Snow accumulation may exceed a certain amount within a specific time frame

C. Clear skies and calm winds are expected

D. Temperature inversions are predicted

When winter weather warnings are issued, they indicate that conditions may lead to significant weather-related impacts, specifically regarding snow accumulation. These warnings often specify that the amount of snowfall is expected to exceed a certain level within a defined time frame, which can affect travel, operations, and overall safety. This information is crucial for pilots, as significant snow can reduce visibility, affect aircraft operations, and create hazardous ground conditions at airports. Awareness of such forecasts allows pilots and flight crews to prepare accordingly, potentially altering flight plans or taking necessary precautions before operating in affected areas. The other choices relate to weather conditions typically not associated with winter weather warnings. Low visibility and high turbulence are not specific indicators of snow accumulation but might arise due to various weather phenomena. Clear skies and calm winds would generally not warrant a winter weather warning, as these conditions are contrary to what is expected in winter storms. Temperature inversions do play a role in how winter weather may develop, but they are not the focus of winter weather warnings, which primarily address impending snow accumulation.

10. The minimum safe altitude (MSA) for the VOR/DME or GPS-A at 7D3 is centered on which position?

A. DEANI intersection

B. WHITE CLOUD VOR/DME

C. MAJUB intersection

D. SOUTH VORTAC

The minimum safe altitude (MSA) for the VOR/DME or GPS-A approach at a specific airport is typically designed to provide pilots with a safe altitude to maintain during their approach and is calculated based on the location of a navigational aid that serves as a reference point. In this case, the MSA is centered on the WHITE CLOUD VOR/DME. The WHITE CLOUD VOR/DME serves as a reference point that allows for safe navigation and approach into the airport at 7D3. By centering the MSA around this VOR/DME, pilots are assured that they are maintaining an altitude that provides adequate terrain clearance and minimizes the risk of obstacles while executing an instrument approach under IMC (Instrument Meteorological Conditions). This approach utilizes existing navigational aids to establish a safe operational environment, ensuring that pilots can safely transition from en route phases to the approach and landing phases of flight, which is the primary purpose of the MSA.