FAA Academy Basics Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. **During an IFR approach, if an aircraft cannot maintain the required altitude, what should the pilot do?**
   - **A. Notify ATC immediately**
   - **B. Descend to the minimum safe altitude**
   - **C. Attempt to regain the altitude**
   - **D. Continue the approach regardless of clearance**

2. **What is the height of the base on the second layer from the following PIREP: OKC UA/OV OKC180010/M 1516/FL120/TP BE20/SK BKN035 TOP075/OVC095-TOPUNKN/WX FV01SM SN/TA MO4/TB MOD 050-070/RM TCU W DURC?**
   - **A. 9000 ft**
   - **B. 9500 ft**
   - **C. 10,000 ft**
   - **D. 11,500 ft**

3. **Which aviation system uses algorithms to prevent mid-air collisions?**
   - **A. FAA Flight Service**
   - **B. Ground Control Station**
   - **C. TCAS**
   - **D. Flight Management System**

4. **A front having a steep slope, forcing the air that is being displaced abruptly upward, is known as a _____ front.**
   - **A. Warm**
   - **B. Occluded**
   - **C. Cold**
   - **D. Stationary**

5. **What document outlines the procedures and rules for airspace use in the U.S.?**
   - **A. Aeronautical Information Manual (AIM)**
   - **B. FAA Regulations Handbook**
   - **C. National Airspace System (NAS) Guide**
   - **D. Flight Operations Manual**

6. What is the maximum airspeed when traveling in a VFR corridor through Class B airspace?

- **A. 150 knots**
- **B. 200 knots**
- **C. 250 knots**
- **D. 300 knots**

7. In aviation, what does PIREP stand for?

- **A. Pilot Weather Report**
- **B. Preliminary Weather Report**
- **C. Pilot In-Road Report**
- **D. Personal In-Flight Report**

8. What does gusty wind code as in the wind group of a METAR?

- **A. G**
- **B. V**
- **C. S**
- **D. M**

9. What is a recommended way for a controller to relayed clearance to a pilot if direct communication is not possible?

- **A. Use satellite communication**
- **B. Have another aircraft relay the clearance**
- **C. Send a text message**
- **D. Wait for the pilot to land**

10. What is a significant impact of freezing rain on aviation?

- **A. It increases fuel efficiency**
- **B. It can cause ice accumulation on aircraft**
- **C. It reduces flight times**
- **D. It enhances lift during takeoff**

Answers

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

Explanations

1. During an IFR approach, if an aircraft cannot maintain the required altitude, what should the pilot do?

A. Notify ATC immediately

B. Descend to the minimum safe altitude

C. Attempt to regain the altitude

D. Continue the approach regardless of clearance

Notifying Air Traffic Control (ATC) immediately is the appropriate response when an aircraft cannot maintain the required altitude during an IFR approach. This action is crucial for several reasons. First, ATC is responsible for ensuring the safety of all aircraft within their airspace. By informing them of the inability to maintain altitude, the pilot provides ATC with essential information that can affect the traffic flow and safety of other flights. This allows ATC to make necessary adjustments, such as altering the aircraft's course or altitude to prevent potential conflicts with other aircraft. Second, maintaining proper communication during IFR operations is critical for safety. Pilots are trained to prioritize communication with ATC in situations where their aircraft's performance is compromised. This helps ensure that all parties are aware of the situation, facilitating timely and appropriate responses. The other choices involve actions that could potentially compromise safety. Descending to the minimum safe altitude without ATC guidance may lead to unsafe flight conditions, and attempting to regain altitude might not be feasible depending on the circumstances. Continuing the approach without clearance could result in an undesirable or dangerous situation. Thus, contacting ATC is the most responsible and safe course of action.

2. What is the height of the base on the second layer from the following PIREP: OKC UA/OV OKC180010/M 1516/FL120/TP BE20/SK BKN035 TOP075/OVC095-TOPUNKN/WX FV01SM SN/TA MO4/TB MOD 050-070/RM TCU W DURC?

A. 9000 ft

B. 9500 ft

C. 10,000 ft

D. 11,500 ft

The height of the base on the second layer indicated in the PIREP is derived from the information provided in the report regarding the clouds. The section "SK BKN035 TOP075" indicates that the base of the broken clouds is at 3,500 feet above mean sea level (AMSL). The following segment, "OVC095-TOPUNKN," mentions overcast clouds that are at 9,500 feet AMSL, but since we are focused on the second layer, "TOP075" is crucial here as it specifies the height of the upper boundary of the broken clouds. Therefore, when assessing the second layer, you must observe that "TOP075" means the upper limit of that layer is at 7,500 feet AMSL. Given the heights indicated in the report, the base of the layer can be inferred. Because the second layer starts at the top of the first layer (which is 7,500 feet according to the PIREP), and considering the aeronautical practice with layers typically forming below the specified ceiling, it is reasonable to conclude that the base of the next layer of clouds listed in the report—indicated as being overcast starting from 9,500 feet—begins at this

3. Which aviation system uses algorithms to prevent mid-air collisions?

A. FAA Flight Service

B. Ground Control Station

C. TCAS

D. Flight Management System

The correct option is TCAS, which stands for Traffic Alert and Collision Avoidance System. This system is specifically designed to reduce the risk of mid-air collisions by using onboard aircraft data and air traffic information to track the positions and movements of other aircraft in close proximity. TCAS employs algorithms that analyze the flight paths of nearby aircraft and determine if they are on a collision course. If a potential conflict is detected, TCAS issues alerts to the flight crew, providing timely advisories for preventive action. These alerts include "Traffic" advisories that indicate the presence of nearby aircraft and "Resolution" advisories that suggest climbing or descending maneuvers to ensure safe separation from the other aircraft. In contrast, the other systems listed have different roles within aviation. FAA Flight Service provides pilots with important pre-flight and in-flight information, such as weather briefings and route planning, rather than collision avoidance. The Ground Control Station is primarily involved in remotely controlling unmanned aerial vehicles (UAVs) and does not focus on mid-air collision avoidance. The Flight Management System is chiefly responsible for flight planning and navigation, helping pilots manage the aircraft's route and performance but does not directly engage in preventing mid-air collisions like TCAS does.

4. A front having a steep slope, forcing the air that is being displaced abruptly upward, is known as a _____ front.

A. Warm

B. Occluded

C. Cold

D. Stationary

A front characterized by a steep slope that forces air upward abruptly is classified as a cold front. Cold fronts occur when a colder air mass pushes into a region occupied by warmer air. The nature of the cold air is denser than the warm air, which causes the warm air to rise quickly over the advancing cold front. This rapid ascent of the warm air can lead to the formation of cumulonimbus clouds and associated weather phenomena, such as thunderstorms and heavy precipitation. Cold fronts are typically indicated by a sharp temperature drop and shifts in wind direction, often followed by clearer skies once the front passes. This abrupt lifting of air is critical in understanding meteorological phenomena associated with storm development, as it can lead to dramatic changes in weather conditions over a short period. This contrasts with warm fronts, where the slope is more gradual, and the warmer air rises slowly, resulting in more steady precipitation.

5. What document outlines the procedures and rules for airspace use in the U.S.?

A. Aeronautical Information Manual (AIM)

B. FAA Regulations Handbook

C. National Airspace System (NAS) Guide

D. Flight Operations Manual

The Aeronautical Information Manual (AIM) serves as the primary resource that outlines the procedures and rules for airspace use in the United States. It is designed to provide essential information for pilots and other aviation personnel to help them understand the operational, procedural, and regulatory frameworks governing air navigation. The AIM is comprehensive and covers topics such as air traffic control procedures, navigation methods, and communication protocols relevant to maintaining safety in U.S. airspace. This manual is updated regularly to reflect changes in regulations and best practices, ensuring that users have the most current and relevant information. While other documents may include relevant information about airspace, such as the FAA Regulations Handbook or the National Airspace System (NAS) Guide, they do not specifically serve the same purpose as the AIM in providing a clear and comprehensive overview of airspace procedures and rules. The Flight Operations Manual typically relates to specific operators and their internal procedures, rather than government-wide regulations and guidelines applicable to all aviators.

6. What is the maximum airspeed when traveling in a VFR corridor through Class B airspace?

A. 150 knots

B. 200 knots

C. 250 knots

D. 300 knots

The maximum airspeed allowed when traveling in a VFR corridor through Class B airspace is 200 knots. This regulation is specifically put in place to accommodate the increased traffic and operational complexity that characterizes Class B airspace. By limiting the speed to 200 knots, it helps ensure that pilots can better maintain visual separation and enhance safety when flying in and around busy airports. In Class B airspace, there are stringent requirements and management strategies to facilitate safe operations, including the establishment of designated VFR corridors that allow pilots to transit the area without disrupting the flow of larger aircraft that may be operating at higher speeds. The speed limit of 200 knots is one of the key components of these operational guidelines.

7. In aviation, what does PIREP stand for?

A. Pilot Weather Report

B. Preliminary Weather Report

C. Pilot In-Road Report

D. Personal In-Flight Report

The correct term PIREP stands for Pilot Weather Report. This is a crucial communication tool in aviation that pilots use to relay real-time weather information to air traffic control and other pilot colleagues. PIREPs provide firsthand accounts of weather conditions encountered during flight, which can include visibility, turbulence, cloud cover, and other atmospheric phenomena. This information is vital for both current and future flights, helping to enhance overall flight safety and operational efficiency. The other options do not accurately represent what a PIREP is. Preliminary Weather Report, for instance, does not reflect the nature of the report being a personal account from a pilot. Similarly, terms like Pilot In-Road Report and Personal In-Flight Report are not recognized in aviation terminology and do not convey the same authoritative and specific nature that a Pilot Weather Report does.

8. What does gusty wind code as in the wind group of a METAR?

A. G

B. V

C. S

D. M

In the wind group of a METAR report, gusty wind is indicated by the letter "G." This indicates that there are wind gusts present, which can be relevant for pilots and meteorologists to evaluate current weather conditions. When assessing wind conditions at an airport, it's crucial to understand the difference between sustained winds and gusts. Sustained winds refer to the average windspeed over a specific period of time, while gusts represent short bursts of wind that may be significantly stronger than the sustained wind speed. The "G" notation allows for an immediate understanding of the presence and impact of these sudden increases in wind speed, which can affect aircraft takeoff, landing, and in-flight operations. The other options do not represent gusty winds in METAR reports. For example, "V" is used for variable winds, "S" denotes strong winds or storms, and "M" is not a standard code used in wind reporting. Thus, understanding the significance of the "G" in the context of aviation weather reporting is essential for safety and operational decision-making.

9. What is a recommended way for a controller to relayed clearance to a pilot if direct communication is not possible?

A. Use satellite communication

B. Have another aircraft relay the clearance

C. Send a text message

D. Wait for the pilot to land

In situations where direct communication between a controller and a pilot is not possible, having another aircraft relay the clearance is the most practical and effective solution. This method leverages the fact that other aircraft in the vicinity can often communicate with both the controller and the pilots in question. By using another aircraft as an intermediary, important information such as clearances, instructions, or advisories can be transmitted quickly and accurately, ensuring the safety and efficiency of air traffic operations. The other options aren't as suitable; for instance, satellite communication might not be available or reliable in all areas, especially in congested or mountainous regions. Sending a text message could be hindered by technological limitations or the need for immediate action, and waiting for the pilot to land unnecessarily delays their operations and could lead to unsafe situations if the pilot has urgent instructions that need to be followed en route. Thus, relaying clearance via another aircraft is often considered the most efficient and timely approach in these scenarios.

10. What is a significant impact of freezing rain on aviation?

A. It increases fuel efficiency

B. It can cause ice accumulation on aircraft

C. It reduces flight times

D. It enhances lift during takeoff

Freezing rain poses a serious hazard to aviation primarily due to its ability to cause ice accumulation on aircraft surfaces. When rain falls and then freezes upon contact with colder surfaces, including the wings, tail, and fuselage of an aircraft, it creates a layer of ice. This accumulation of ice disrupts the aerodynamics of the aircraft, which can significantly impact its lift and drag characteristics, and potentially lead to control difficulties during flight. Ice on wings can alter the shape and smoothness of the airfoil, decreasing the aircraft's ability to generate lift and potentially leading to stalling, particularly during critical phases of flight such as takeoff and landing. Moreover, ice accumulation on control surfaces can impair maneuverability and responsiveness of the aircraft. In addition to operational impacts, the presence of ice can also necessitate additional pre-flight checks, de-icing procedures, and delays, all of which contribute to potential safety risks. Thus, understanding the effects of freezing rain is essential for maintaining safe aviation operations.