ERAU Instrument Checkride Practice Test (Sample)

Study Guide

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Questions

1. When is the use of RAIM generally recommended?

A. Always required for visual flight

B. During any IFR flight using GPS

C. Only in non-controlled airspace

D. When flying below 10,000 feet

2. Which items are included in VFR Day equipment under the acronym ATOMATO FLAMES?

A. Magnetic Compass, ELT, Safety Belts

B. GPS, VOR, Autopilot

C. Weather Radar, Fuses, Landing Lights

D. Airspeed, Fuel Gauge, Oil Temperature Gauge

3. What is the third T in the five Ts of entering a hold?

A. Throttle

B. TIme

C. Turn

D. Talk

4. What does OROCA stand for?

A. Off Route Object Collision Altitude

B. Off Route Obstruction Clearance Altitude

C. Outside Route Obstruction Clearance Altitude

D. Obstruction Route Automatic Clearance Altitude

5. At what temperature range does clear ice typically form?

A. 0 to -10 degrees Celsius

B. -10 to -15 degrees Celsius

C. -15 to -20 degrees Celsius

D. Above 0 degrees Celsius

6. How many satellites does GPS operate with at a minimum?

A. 12

B. 20

C. 24

D. 30

7. What accuracy does GPS typically provide in enroute phases?

A. 1 nm

B. 2 nm

C. 3 nm

D. 4 nm

8. What visual reference must be identified to descend below MDA/DA?

A. Sky condition

B. The threshold lights

C. Flight visibility

D. Cloud base

9. When can an instrument approach procedure be logged according to the regulatory standards?

A. When flying only in visual conditions

B. When established on each segment down to minimums

C. When flying with an instructor

D. When at least two instruments are used

10. What is the requirement for completing an IPC after the grace period for currency?

A. A written exam

B. Mock flight with a CFII

C. Proficiency demonstration on ground training

D. Standards found in ACS

Answers

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

Explanations

1. When is the use of RAIM generally recommended?

A. Always required for visual flight

B. During any IFR flight using GPS

C. Only in non-controlled airspace

D. When flying below 10,000 feet

The use of RAIM, or Receiver Autonomous Integrity Monitoring, is generally recommended during any IFR flight using GPS. RAIM is a critical feature in GPS navigation that helps ensure the integrity of the GPS signals being received. It monitors the satellite signals to detect and alert the pilot to any potential errors in positional information that could jeopardize the safety of the navigation. When flying under IFR (Instrument Flight Rules), the reliability and accuracy of navigation systems are paramount, especially in controlled airspace where precise tracking and location are required for safety and compliance with air traffic control. GPS can be a reliable source of navigation during IFR flights, but its integrity must be verified, which is where RAIM comes into play. RAIM checks the consistency of the signals received from multiple satellites to determine whether the GPS position is trustworthy. If a fault is detected, RAIM will provide an alert to the pilot, allowing them to take appropriate action, such as switching to an alternative navigation source. This ensures that pilots can have confidence in the navigation data they rely on when flying in challenging conditions where maintaining situational awareness is critical. Other options, while they may mention circumstances concerning vertical separation, controlled airspace, or visual flight rules, do not capture the comprehensive necessity of RAIM

2. Which items are included in VFR Day equipment under the acronym ATOMATO FLAMES?

A. Magnetic Compass, ELT, Safety Belts

B. GPS, VOR, Autopilot

C. Weather Radar, Fuses, Landing Lights

D. Airspeed, Fuel Gauge, Oil Temperature Gauge

The correct answer includes items that align with the 'ATOMATO FLAMES' acronym, which stands for the essential equipment required for VFR (Visual Flight Rules) flight during the day. Each letter in the acronym represents a specific item or category of equipment that must be on board the aircraft. In this case, the items listed—Magnetic Compass, ELT (Emergency Locator Transmitter), and Safety Belts—are essential for safe flight operations under VFR. A Magnetic Compass ensures that pilots can navigate effectively. The ELT is crucial for search and rescue operations in case of an emergency, and Safety Belts are vital safety features that protect occupants during flight. The other options listed do not fully encompass the requirements set out by the 'ATOMATO FLAMES' guidelines and include items that are not required for VFR Day operations. For instance, while GPS and VOR equipment are beneficial, they are not mandatory under this acronym. Similarly, weather radar and landing lights may enhance safety and operational capability, but they do not fit into the mandatory items required for VFR Day flight.

3. What is the third T in the five Ts of entering a hold?

A. Throttle

B. TIme

C. Turn

D. Talk

The third T in the five Ts of entering a hold is 'Turn.' The five Ts are a memory aid used to help pilots remember the steps needed to enter a holding pattern effectively. The steps include: 1. **Turn - This involves executing the appropriate turn to orient the aircraft in the direction of the hold. It ensures that you are positioned correctly to start the hold. 2. **Time** - This refers to the time you will spend in the holding pattern, which can be important for maintaining proper spacing and separation from other traffic. 3. **Throttle** - This step focuses on adjusting the throttle to maintain the desired airspeed while in the hold. 4. **Talk** - This encompasses communicating your position and intentions with Air Traffic Control as necessary. In the context of the five Ts, the 'Turn' is fundamental as it sets the aircraft on the correct heading to enter the hold and ensures that subsequent steps, such as timing and managing throttle, can be accurately performed. Understanding this sequence is crucial for efficient and safe holding pattern entries.**

4. What does OROCA stand for?

A. Off Route Object Collision Altitude

B. Off Route Obstruction Clearance Altitude

C. Outside Route Obstruction Clearance Altitude

D. Obstruction Route Automatic Clearance Altitude

The term OROCA stands for Off Route Obstruction Clearance Altitude. This is a specific altitude that provides a pilot with a safety buffer against terrain and obstacles when flying off an established route, such as a published airway. The OROCA is designed to ensure that an aircraft remains clear of obstructions that may be present outside of the typical airspace structure, enhancing safety during navigation in less controlled areas. The OROCA is essential for pilots, especially those flying in areas where detailed obstacle information may not be available, as it helps in determining safe altitudes during flight operations away from defined airways. This altitude is typically depicted on aeronautical charts, allowing pilots to maintain situational awareness and make informed decisions regarding altitude management. Understanding the concept of OROCA is vital for instrument flight operations, as it highlights the importance of being aware of both navigational routes and the surrounding terrain and obstacles to ensure safe flight.

5. At what temperature range does clear ice typically form?

A. 0 to -10 degrees Celsius

B. -10 to -15 degrees Celsius

C. -15 to -20 degrees Celsius

D. Above 0 degrees Celsius

Clear ice typically forms in the temperature range of 0 to -10 degrees Celsius. This type of ice develops when supercooled water droplets come into contact with a surface that is at or below freezing temperatures. The supercooled droplets freeze upon impact, resulting in a smooth, clear layer of ice. When the temperature is at or just below the freezing point, conditions are optimal for the accumulation of clear ice, as the droplets do not have enough kinetic energy to splash and create rough textures. As the temperature drops further below freezing, the likelihood and intensity of icing changes, often leading to other forms of ice such as rime ice. Thus, the specified range is crucial for understanding the conditions under which clear ice is most likely to occur.

6. How many satellites does GPS operate with at a minimum?

A. 12

B. 20

C. 24

D. 30

The Global Positioning System (GPS) requires a minimum of 24 satellites to provide accurate location data anywhere on Earth. This number allows for sufficient coverage and redundancy, ensuring that there are always enough satellites in view for a GPS receiver to calculate a precise position. GPS operates by triangulating signals from multiple satellites; typically, a minimum of four satellites is necessary to determine a three-dimensional position (latitude, longitude, and altitude) and synchronize time. With 24 operational satellites, GPS can maintain the required coverage so that at least four satellites are visible from any point on the Earth's surface at any given time. Although the system has more than 24 satellites in orbit, having at least this minimum number ensures the reliability and accuracy of the positioning data provided to users. This design accounts for satellite maintenance, position orbital mechanics, and potential outages or failures of individual satellites. Thus, 24 is the standard minimum to ensure effective global positioning capabilities.

7. What accuracy does GPS typically provide in enroute phases?

A. 1 nm

B. 2 nm

C. 3 nm

D. 4 nm

In the enroute phase of flight, GPS typically provides an accuracy of about 2 nautical miles. This standard is based on several factors, including the satellite geometry and the potential for signal errors that can occur during typical flight conditions. While GPS can offer greater precision under ideal circumstances, such as in approach phases or when enhanced systems are in use (like WAAS), the 2 nautical mile accuracy is recognized as a baseline standard during the enroute segment. This level of accuracy is considered sufficient for navigational purposes when flying at cruising altitudes and speeds. Many pilots rely on this understanding to ensure that their navigational techniques and equipment are properly aligned with the performance capabilities of the GPS systems in use. This allows for safe and efficient route planning in instrument flight operations.

8. What visual reference must be identified to descend below MDA/DA?

A. Sky condition

B. The threshold lights

C. Flight visibility

D. Cloud base

To descend below Minimum Descent Altitude (MDA) or Decision Altitude (DA) during an instrument approach, it is crucial to identify specific visual references that provide assurance that a safe landing can be made. One of the primary visual references is the runway threshold lights. These lights indicate that the runway is sufficiently visible and that the pilot is in a position to safely land the aircraft. When threshold lights are visible, it means that the pilot has a clear indication of the runway's position, which is essential for making a safe landing. The presence of appropriate visual references, such as threshold lights, outlines the ability to proceed with the descent and assures compliance with regulations requiring visual contact with the runway environment. Other options—while they are related to flying safety—do not fulfill the criteria for proceeding below MDA/DA. For example, flight visibility refers to the general visibility conditions, which may or may not include adequate references for landing, and sky condition and cloud base give information on the weather but do not provide direct visual cues for a safe approach and landing. Thus, verifying threshold lights is a critical step in deciding to descend safely.

9. When can an instrument approach procedure be logged according to the regulatory standards?

A. When flying only in visual conditions

B. When established on each segment down to minimums

C. When flying with an instructor

D. When at least two instruments are used

Logging an instrument approach procedure is permissible when the pilot is established on each segment down to the minimums specified for that approach. This reflects a fundamental regulatory requirement, which emphasizes the need for the pilot to demonstrate proficiency in the various phases of the approach. Each segment of the approach—initial, intermediate, and final—has specific altitudes, courses, and configurations that must be adhered to; thus, successful management of all these elements up to the published minimums shows successful completion of the procedure. Establishing on each segment means that the pilot is actively following the prescribed path while utilizing the appropriate instruments, showcasing a practical grasp of instrument flight rules (IFR). Only after reaching the minimums can a pilot log that approach procedure, which indicates not only compliance with the legal flying regulations but also signals that the pilot is adequately equipped to make decisions based on the instrument readings alone in the event of poor visibility or instrument conditions.

10. What is the requirement for completing an IPC after the grace period for currency?

A. A written exam

B. Mock flight with a CFII

C. Proficiency demonstration on ground training

D. Standards found in ACS

Completing an Instrument Proficiency Check (IPC) after the currency grace period requires adherence to the standards outlined in the Airman Certification Standards (ACS). The ACS provides specific performance standards and evaluation criteria necessary for pilots to demonstrate their instrument flying proficiency. When a pilot's currency has lapsed, the IPC is designed to assess whether they can operate safely under instrument flight rules (IFR) conditions. By aligning the IPC performance with the standards detailed in the ACS, the instructor can effectively evaluate the pilot's skills in advanced maneuvers, navigation, and decision-making under IFR conditions, ensuring a comprehensive assessment of their readiness to fly instrument flights. While the other options suggest various components that could be related to training or assessment, only the use of standards outlined in the ACS directly governs the requirements for completing an IPC, ensuring that pilots are evaluated consistently and thoroughly based on established proficiency criteria.