Envoy Technical Practice Test (Sample)

Study Guide

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Questions

1. When approaching 20,000 feet from 35,000 feet at 300 knots, how many miles out should you begin your descent?

A. 30 miles

B. 42 miles

C. 45 miles

D. 50 miles

2. Are there any hot spots at the DFW airport?

A. Yes, multiple hot spots

B. No, there are no hot spots

C. There are hot spots, but they are not well documented

D. Hot spot information varies with weather conditions

3. What is the impact of accelerated slipstream if the critical engine fails?

A. It causes the aircraft to pitch up

B. It reduces drag and increases speed

C. It results in a greater loss of lift on the wing

D. It stabilizes the aircraft's roll

4. What does a descent rate of 5 NM/min correspond to in terms of feet?

A. 500 feet/min

B. 1000 feet/min

C. 750 feet/min

D. 900 feet/min

5. At what altitudes does RVSM airspace begin and end?

A. FL250-FL350

B. FL290-FL410

C. FL300-FL400

D. FL280-FL420

6. In a METAR, what does the 'T' group signify?

- **A. Temperature readings taken at noon**
- **B. Specific temperatures reported on the hour**
- **C. Trends in temperature changes**
- **D. Thunderstorm activity**

7. What is one method of entering a hold in aviation?

- **A. Direct**
- **B. Loop**
- **C. Circle**
- **D. Square**

8. Is it permissible to fly through a MOA?

- **A. Yes, with prior permission**
- **B. No, it's prohibited**
- **C. Yes, if it's not active**
- **D. Yes**

9. What does "descend via" mean in an approach procedure?

- **A. You can descend as per STAR altitudes**
- **B. You must maintain current altitude until instructed**
- **C. Immediate descent to final approach altitude**
- **D. Maintain altitude until your final waypoint**

10. After seeing approach lights on landing, what must you see next in order to safely land?

- **A. Runway markings**
- **B. Runway lights**
- **C. Red terminating bars**
- **D. All of the above**

Answers

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

Explanations

1. When approaching 20,000 feet from 35,000 feet at 300 knots, how many miles out should you begin your descent?

A. 30 miles

B. 42 miles

C. 45 miles

D. 50 miles

To determine the distance required for a descent from 35,000 feet to 20,000 feet at a speed of 300 knots, you can apply a common rule of thumb used in aviation for calculating descent profiles. A standard descent rate is often cited as about 3,000 feet per minute. If a pilot maintains this rate while descending from 35,000 feet to 20,000 feet, they need to lose 15,000 feet of altitude. Dividing 15,000 feet by a descent rate of 3,000 feet per minute gives you 5 minutes of descent time. At a ground speed of 300 knots, you can convert the speed to miles per minute to find the coverage during the descent. Knowing that there are 60 minutes in an hour, 300 knots translates to 5 miles per minute (300 knots ÷ 60 minutes = 5 miles per minute). Multiplying the descent time of 5 minutes by the speed of 5 miles per minute indicates that you need to start your descent approximately 25 miles out. However, to account for the time it takes to transition from descent to level flight stable at the new altitude, it's common practice to extend this distance. This leads to

2. Are there any hot spots at the DFW airport?

A. Yes, multiple hot spots

B. No, there are no hot spots

C. There are hot spots, but they are not well documented

D. Hot spot information varies with weather conditions

The concept of "hot spots" in the context of an airport like DFW (Dallas/Fort Worth International Airport) typically refers to areas on the runway or taxiway where there is a significant risk of an incident, such as runway incursions or taxiway miscommunications. Saying that there are no hot spots means that the airport has effectively implemented operational procedures, signage, and technology to mitigate risks associated with aircraft movements. If DFW is deemed to have no hot spots, it suggests a well-designed layout and effective air traffic management, contributing to overall safety. It could indicate that any potential risks have been thoroughly assessed and managed, allowing for smooth operations without specific areas that might pose a higher risk of incidents. The other options suggest varying degrees of risk or documentation regarding potential hot spots, but asserting that no hot spots exist helps to reinforce a perception of safe airport operations, highlighting DFW's commitment to minimizing risks associated with its layout and operation.

3. What is the impact of accelerated slipstream if the critical engine fails?

A. It causes the aircraft to pitch up

B. It reduces drag and increases speed

C. It results in a greater loss of lift on the wing

D. It stabilizes the aircraft's roll

When considering the impact of accelerated slipstream in the event of a critical engine failure, it's important to understand how airflow around the wings is affected. With a critical engine failing, the induced airflow, or slipstream, from the operating engine changes. Accelerated slipstream refers to the increase in speed of the air over the wing caused by the thrust produced by the operating engine. In scenarios where one engine fails, the lack of balanced thrust results in altered aerodynamics, particularly on the wing of the aircraft on the side of the inoperative engine. The operating engine generates a strong airflow over the wing, but without the counteracting airflow from the failed engine, there can be a significant imbalance, leading to a greater loss of lift on the wing next to the failed engine. This phenomenon can lead to an increased tendency for the aircraft to roll toward the side of the failed engine, making control more challenging. As for the other options, they don't accurately reflect the consequences of a critical engine failure impacting the aerodynamic balance and lift distribution on the aircraft. The correct choice emphasizes the significant aerodynamic effect on lift due to an asymmetric thrust situation created by the engine failure.

4. What does a descent rate of 5 NM/min correspond to in terms of feet?

A. 500 feet/min

B. 1000 feet/min

C. 750 feet/min

D. 900 feet/min

To determine how a descent rate of 5 nautical miles per minute translates into feet per minute, it's essential to understand the conversion between nautical miles and feet. One nautical mile is equivalent to 6,076.1 feet. Therefore, to find out how many feet correspond to 5 nautical miles, you multiply the number of nautical miles by the number of feet in a nautical mile: 5 NM * 6,076.1 feet/NM = 30,380.5 feet. Since this calculation gives the total descent per minute in feet, we note that there are 60 minutes in an hour. So, to find the descent rate in feet per minute, we divide the total feet descended in one minute by the time component, which is already 1 minute in this case: - The descent rate is already represented as feet per minute. Consequently, each nautical mile translates into about 1,000 feet of descent per minute. Therefore, 5 nautical miles per minute roughly equals a descent rate of 1,000 feet per minute when simplified and rounded appropriately. This makes the answer correspond directly to a descent rate of 5 nautical miles equating to 1,000 feet per minute.

5. At what altitudes does RVSM airspace begin and end?

A. FL250-FL350

B. FL290-FL410

C. FL300-FL400

D. FL280-FL420

RVSM, or Reduced Vertical Separation Minimum, is a system that allows aircraft to operate with reduced vertical separation between flight levels. Specifically, RVSM airspace begins at Flight Level (FL) 290 and extends up to FL 410. This range allows for a separation of just 1,000 feet between aircraft, as opposed to the standard 2,000 feet that is used outside of RVSM airspace. The altitudes of FL290 to FL410 are carefully designated to ensure the safety and efficiency of high-altitude flights, particularly in busy air traffic corridors. Aircraft operating in this airspace must be RVSM-compliant, meaning they are equipped with the necessary technology and systems to maintain accurate altitude and ensure proper separation. The choice of FL290 to FL410 reflects the operational needs of both commercial and general aviation, as it encompasses a significant portion of the airspace used for long-haul flights, allowing for optimized routing and fuel efficiency. Other options, while close, do not correctly encompass the full range of RVSM airspace as defined in current aviation regulations.

6. In a METAR, what does the 'T' group signify?

A. Temperature readings taken at noon

B. Specific temperatures reported on the hour

C. Trends in temperature changes

D. Thunderstorm activity

The 'T' group in a METAR report specifically denotes the temperature readings that are taken at the moment the report is issued, rather than at predetermined times like noon. It provides precise temperature values along with their respective dew point readings, which are vital for pilots and meteorologists to evaluate current weather conditions. This format offers a clear understanding of the atmospheric temperature, which can aid in decision-making processes related to flight operations, such as assessing potential icing conditions or adjusting performance calculations for aircraft. While other options mention aspects of temperature or weather, they do not accurately capture the exact purpose of the 'T' group in METARs, which is focused on providing immediate and specific temperature data at the time of reporting.

7. What is one method of entering a hold in aviation?

A. Direct

B. Loop

C. Circle

D. Square

Entering a hold in aviation can be accomplished through several methods, but one of the most straightforward and commonly used methods is the direct entry. In this method, the aircraft approaches the holding pattern directly from the inbound course. The pilot makes a 180-degree turn to initiate the holding pattern and then flies outbound for a specified time or distance before turning back to rejoin the inbound leg of the hold. This technique is favored for its simplicity and effectiveness, allowing for a smooth transition into the holding pattern. The other methods, while valid, may require more complex maneuvers or adjustments. For instance, a loop entry involves a more extensive turn to the right or left, and a circle entry typically means circling around the holding fix before entering the pattern. A square entry, although less common, involves a series of turns that might not be as direct. Direct entry minimizes confusion and helps maintain spatial awareness, making it the preferred choice in many situations.

8. Is it permissible to fly through a MOA?

A. Yes, with prior permission

B. No, it's prohibited

C. Yes, if it's not active

D. Yes

In the context of flying through a Military Operations Area (MOA), it is permissible under certain conditions, one of which is if the MOA is not active. MOAs are designed to separate military training activities from civilian air traffic, but they don't prohibit civilian aircraft from entering these airspaces when they are not in use. If a MOA is active, pilots are expected to avoid flying through it, but if they are aware that it is inactive, they can safely navigate through the airspace. This understanding highlights the importance of situational awareness and communication with air traffic control to determine the current status of a MOA before flying through it. This provides a framework for how pilots can operate around MOAs, allowing for flexibility under the right circumstances, particularly when coordination or notification of an inactive status has been established.

9. What does "descend via" mean in an approach procedure?

A. You can descend as per STAR altitudes

B. You must maintain current altitude until instructed

C. Immediate descent to final approach altitude

D. Maintain altitude until your final waypoint

In an approach procedure, "descend via" refers to an instruction allowing the aircraft to follow the published routing and altitude restrictions associated with a Standard Terminal Arrival Route (STAR). This means that pilots can begin their descent according to the specified altitudes indicated on the STAR, which are designed to guide the aircraft safely to the destination airport. Choosing to "descend via" acknowledges that the pilot must adhere to the altitude and speed constraints outlined in the STAR. This approach not only helps maintain safe vertical separation from other traffic but also aids in the efficient flow of air traffic into busy terminal areas. The inclusion of this phrase in an approach procedure is crucial for both compliance with air traffic control and to facilitate smooth arrivals. Understanding this concept is vital for pilots as it directly influences their ability to execute arrivals and approaches effectively while adhering to safety protocols.

10. After seeing approach lights on landing, what must you see next in order to safely land?

A. Runway markings

B. Runway lights

C. Red terminating bars

D. All of the above

To safely land after seeing approach lights on landing, it is essential to observe all necessary visual cues that confirm the aircraft is properly aligned and positioned for landing. Recognizing runway markings provides crucial information about the runway's dimensions and orientation. Runway lights are vital as they indicate the runway environment, especially under low visibility conditions, helping pilots assess their distance from the runway threshold. Finally, red terminating bars signal the end of the usable runway, alerting pilots to not land beyond that point. Together, these elements create a comprehensive visual profile that ensures situational awareness leads to a safe landing. Thus, seeing all of them—runway markings, runway lights, and red terminating bars—is necessary for confirming a safe approach and landing.