

# C-5 Auxiliary Power Unit (APU) Practice Test (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

SAMPLE

- 1. In which position must the battery switch be for a fire handle shutdown?**
  - A. OFF**
  - B. LOCK**
  - C. NORM or STBY**
  - D. AUTO**
- 2. What is the maximum transient limit for EGT during APU start?**
  - A. 600°C for 30 seconds**
  - B. 715°C for 20 seconds**
  - C. 824°C for 10 seconds**
  - D. 691°C for 15 seconds**
- 3. During an APU emergency, which procedure should be prioritized first?**
  - A. Check for physical injuries**
  - B. Power off all systems**
  - C. Pull the applicable APU fire pull handle**
  - D. Activate backup power supply**
- 4. What must be accomplished if there is no external power available for an APU start?**
  - A. No action is needed**
  - B. A fire truck must be standing by**
  - C. Backup generator must be activated**
  - D. Inform the captain of the situation**
- 5. What is the acceptable range indicated by the FREQ meter on the AC SYS CONTROL PANEL?**
  - A. 380 to 390 Hz**
  - B. 394 to 406 Hz**
  - C. 400 to 420 Hz**
  - D. 410 to 430 Hz**

- 6. Transitioning from external power to APU power may cause which system to fail?**
- A. V/UHF 1 radio**
  - B. V/UHF 2 radio**
  - C. UHF 3 communications**
  - D. VHF 2 navigation**
- 7. Under what condition can the Electric Suction Boost pumps be shut off while operating hydraulic systems?**
- A. After completing maintenance**
  - B. During a minor malfunction**
  - C. During normal operation**
  - D. Never**
- 8. Before pressurizing the No. 2 and No. 3 hydraulic systems, what should be set on the INBD ELEVATOR panel?**
- A. On**
  - B. Off**
  - C. Standby**
  - D. Reset**
- 9. What is the maximum EGT upon applying load at governed speed?**
- A. 600°C**
  - B. 691°C**
  - C. 746°C**
  - D. 715°C**
- 10. What does TO 1C-5-714 modify?**
- A. Battery systems**
  - B. AMP systems**
  - C. Fuel management systems**
  - D. Electrical wiring systems**

## **Answers**

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

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## **Explanations**

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**1. In which position must the battery switch be for a fire handle shutdown?**

- A. OFF**
- B. LOCK**
- C. NORM or STBY**
- D. AUTO**

For a fire handle shutdown in the C-5 Auxiliary Power Unit system, the battery switch must be in the NORM or STBY position. This requirement is crucial because these settings ensure that the auxiliary power unit can still receive power to allow for proper functions during a fire emergency, such as activating fire suppression systems and ensuring that warning signals are operational. When the battery switch is in the NORM or STBY position, the necessary electrical systems remain powered, which is vital for executing the shutdown procedures effectively. If the battery switch were turned OFF or locked, this would disable the APU and associated systems, potentially jeopardizing safety measures during a fire event since critical functions would not be available. The AUTO setting typically refers to operational configurations where the APU operates automatically based on system demands, rather than specifically for actions related to fire emergencies, making it unsuitable for this context. Thus, the NORM or STBY positions support the critical actions required during a fire handle shutdown, emphasizing the importance of maintaining electrical power to systems responsible for safety and emergency response.

**2. What is the maximum transient limit for EGT during APU start?**

- A. 600°C for 30 seconds**
- B. 715°C for 20 seconds**
- C. 824°C for 10 seconds**
- D. 691°C for 15 seconds**

The maximum transient limit for Exhaust Gas Temperature (EGT) during APU start is defined to ensure that the engine can safely handle higher temperatures for a short duration without causing damage. The correct answer indicates that the EGT can reach up to 715°C for a period of 20 seconds during the start sequence. This limit is established based on the design parameters of the APU, which allow it to tolerate these elevated temperatures temporarily to ensure successful operation and ignitions. The transient limits exist to ensure reliability and safety in operation. Exceeding these limits can lead to excessive wear or failure of the engine components, hence, understanding the specified transient limits is crucial for personnel operating the APU. Keeping the EGT within the maximum specified limit during start-up helps to maintain the operational integrity of the APU and prolong its life, which is vital for mission readiness and overall aircraft performance. The other choices represent either lower maximum transient limits, which would not align with the established standards for the APU being discussed, or durations that exceed safe operational parameters, potentially resulting in damage.

**3. During an APU emergency, which procedure should be prioritized first?**

- A. Check for physical injuries**
- B. Power off all systems**
- C. Pull the applicable APU fire pull handle**
- D. Activate backup power supply**

In the event of an APU emergency, the priority is to ensure safety and mitigate risks associated with a potential fire. The correct response would be to pull the applicable APU fire pull handle. This action is critical as it directly addresses the immediate threat of fire by cutting off fuel and electrical power to the APU, thereby reducing the risk of an escalation of the emergency. Addressing a potential fire hazard is paramount because if the APU is on fire, other systems and personnel are at significant risk. Once the fire handle is pulled, it initiates emergency procedures aimed at extinguishing the fire and safeguarding the aircraft and crew. Other actions, although important, come after addressing the immediate danger posed by a fire. Checking for physical injuries would be a sensible step, but it is secondary to eliminating the source of potential harm. Powering off all systems and activating backup power supply might be necessary in broader emergency procedures, but the central concern in an APU emergency specifically revolves around the fire risk. Thus, taking immediate action to control and eliminate fire hazards is of utmost importance.

**4. What must be accomplished if there is no external power available for an APU start?**

- A. No action is needed**
- B. A fire truck must be standing by**
- C. Backup generator must be activated**
- D. Inform the captain of the situation**

When starting the Auxiliary Power Unit (APU) without external power available, having a fire truck standing by is a critical safety measure. This is due to the potential risks involved in the APU start sequence, especially if the procedure does not go as planned. APUs can produce significant heat and include fuel systems that could pose a fire hazard, particularly in confined spaces or in situations where there is a malfunction during start. Having a fire truck on standby ensures that emergency response resources are immediately available to deal with any issues that may arise, such as an engine fire or other emergency conditions that might occur during the start-up process. This proactive approach helps ensure the safety of personnel and equipment during operations where external power is not available.

**5. What is the acceptable range indicated by the FREQ meter on the AC SYS CONTROL PANEL?**

- A. 380 to 390 Hz**
- B. 394 to 406 Hz**
- C. 400 to 420 Hz**
- D. 410 to 430 Hz**

The FREQ meter on the AC SYS CONTROL PANEL indicates the frequency of the electrical generation system, which is critical for ensuring that the aircraft's electrical systems operate efficiently without causing damage. The acceptable range of 394 to 406 Hz aligns with the operational requirements for the C-5's APU, as it ensures the power supplied is stable and within design parameters to avoid fluctuations that could disrupt the aircraft's systems. Operating outside this range could lead to inefficiencies, malfunctions, or potential damage to sensitive equipment. Understanding this frequency range is essential for operators and maintenance personnel to ensure optimal performance of the APU and associated electrical systems, thereby ensuring aircraft safety and reliability.

**6. Transitioning from external power to APU power may cause which system to fail?**

- A. V/UHF 1 radio**
- B. V/UHF 2 radio**
- C. UHF 3 communications**
- D. VHF 2 navigation**

The correct answer indicates that transitioning from external power to APU power can lead to the failure of the V/UHF 2 radio system. During this transition, there is often a momentary interruption or fluctuation in power supply. This can influence the performance of sensitive electronic systems on the aircraft, particularly in communication and navigation equipment. The V/UHF 2 radio may be more susceptible to these power fluctuations compared to others, which could result in a temporary loss of functionality or a disruption in its operations. Ensuring stable power during critical transitions is essential in maintaining the reliability of avionics systems, especially for communication devices where uninterrupted operation is necessary for effective coordination and response in aviation environments. Other systems such as V/UHF 1 radio, UHF 3 communications, and VHF 2 navigation may experience different levels of immunity to power changes or may be designed with safeguards that prevent failure during these transitions. Understanding these electrical transitions and the characteristics of each system is crucial for effective maintenance and operational readiness.

**7. Under what condition can the Electric Suction Boost pumps be shut off while operating hydraulic systems?**

- A. After completing maintenance**
- B. During a minor malfunction**
- C. During normal operation**
- D. Never**

The Electric Suction Boost pumps are critical components in the hydraulic systems of the C-5 aircraft. These pumps maintain adequate hydraulic pressure to ensure the proper operation of hydraulic systems, especially during low demand or when the engine-driven pumps may not be able to provide sufficient pressure. As such, they should remain operational whenever hydraulic systems are in use to prevent potential failures and maintain system integrity. Shutting off the Electric Suction Boost pumps while the hydraulic systems are operating can lead to a drop in hydraulic pressure, which may cause inconsistency or failure in the operation of essential systems. It is vital for the safety and reliability of the aircraft that these pumps be kept on during all phases of operation, ensuring that hydraulic power is stable and available as required.

**8. Before pressurizing the No. 2 and No. 3 hydraulic systems, what should be set on the INBD ELEVATOR panel?**

- A. On**
- B. Off**
- C. Standby**
- D. Reset**

The correct response is "Off" because the INBD ELEVATOR panel must be in the Off position before pressurizing the No. 2 and No. 3 hydraulic systems. This is a critical safety measure that prevents potential hazards associated with hydraulic pressure affecting the control surfaces, especially during system checks or maintenance procedures. When the panel is set to Off, it ensures that the elevators are not inadvertently activated while the hydraulic systems are being pressurized, which could result in unintended movement or malfunction. This procedure safeguards against mixing hydraulic power with elevator operation, creating a safer environment for maintenance personnel and ensuring the integrity of the control systems during pressurization. Proper adherence to this protocol is essential for maintaining the operational reliability and safety of the aircraft's hydraulic systems.

**9. What is the maximum EGT upon applying load at governed speed?**

- A. 600°C**
- B. 691°C**
- C. 746°C**
- D. 715°C**

The maximum exhaust gas temperature (EGT) upon applying load at governed speed is a critical parameter for monitoring the performance and health of the Auxiliary Power Unit (APU). Understanding that this temperature reflects the efficiency and operational limits of the APU, we recognize that the maximum permissible EGT is established to ensure safe and reliable operation. In this case, the correct answer of 746°C is in alignment with technical specifications and performance standards established for the C-5 APU.

Operating the APU at this maximum EGT can indicate that the engine is working at its optimal capacity under a full load scenario. If the temperature exceeds this limit, it could signify potential over-temperature conditions that may lead to engine damage or reduced lifespan. Therefore, knowing that 746°C is the designated threshold allows operators to run the APU efficiently while safeguarding against possible overheating and ensuring the system operates within its designed thermal limits.

**10. What does TO 1C-5-714 modify?**

- A. Battery systems**
- B. AMP systems**
- C. Fuel management systems**
- D. Electrical wiring systems**

The TO 1C-5-714 is a technical order that focuses on modifications related to the AMP systems. AMP stands for Auxiliary Power Module, which plays a crucial role in the functionality of the C-5's auxiliary power unit (APU). This order outlines how the AMP systems operate, their maintenance, and any necessary revisions for optimal performance. Understanding the significance of AMP systems is essential; they are responsible for starting the engines and providing power for various systems while the aircraft is on the ground. Modifications in this area can directly impact the efficiency and reliability of the APU, ensuring that it meets the operational requirements and standards set by the military. Relating to the other options, battery systems deal with power storage, fuel management systems focus on fuel efficiency and distribution within the aircraft, and electrical wiring systems are concerned with the transmission of electrical power. While these systems are integral to aircraft operation, the specific modifications addressed by TO 1C-5-714 pertain exclusively to the AMP systems, making it the correct choice.