AMT Airframe Oral and Practical (O&P) Practice Test (Sample)

Study Guide

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Questions

1. What is a common characteristic of rib stitching on an aircraft?

A. It should be loose to allow fabric movement

B. It should be consistently spaced according to guidelines

C. It is done primarily by hand for accuracy

D. It is only necessary on the wings

2. What is the tool used to measure the size of unmarked electrical wire?

A. Caliper

B. Wire gauge

C. Multimeter

D. Micrometer

3. What is the role of warning lights in relation to fuel systems?

A. To indicate engine temperature

B. To signal low oil pressure

C. To indicate low fuel pressure or low fuel quantity

D. To monitor battery voltage

4. What scenario would likely activate the master caution light?

A. When exceeding cruising altitude

B. During unplanned engine shutdown

C. After landing gear retraction

D. When equipment is operating normally

5. What is the purpose of using fungicidal dope when doping aircraft fabric?

A. To enhance paint adhesion

B. To prevent micro-biological deterioration of the fabric

C. To improve the finish gloss

D. To increase drying time

6. Which of the following is NOT a method used in forming sheet metal?

- **A. Stretching**
- **B. Shaping**
- **C. Crimping**
- **D. Shrinking**

7. Besides weight reduction, what is another function of a fuel jettisoning system?

- **A. To enhance engine efficiency**
- **B. To balance fuel distribution between wings**
- **C. To perform routine maintenance on fuel systems**
- **D. To test fuel quality in the tank**

8. What should you check for on flex hoses during brake inspection?

- **A. Discoloration**
- **B. Swelling, cracks, or soft spots**
- **C. Length and diameter**
- **D. Age and manufacturer**

9. How do you determine the appropriate type of hydraulic fluid for a specific system?

- **A. Externally examining the lines**
- **B. Consulting the Aircraft Maintenance Manual or instruction plate**
- **C. By checking the manufacturer's website**
- **D. Asking a co-pilot**

10. What species of wood is used as a standard for strength properties of other species of wood in aircraft structures?

- **A. Oak**
- **B. Pine**
- **C. Spruce**
- **D. Maple**

Answers

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

Explanations

1. What is a common characteristic of rib stitching on an aircraft?

A. It should be loose to allow fabric movement

B. It should be consistently spaced according to guidelines

C. It is done primarily by hand for accuracy

D. It is only necessary on the wings

The correct response highlights that rib stitching must be consistently spaced according to established guidelines, which is crucial for maintaining the structural integrity and aerodynamic efficiency of the aircraft. Proper spacing affects how well the fabric material conforms to the ribs, ensuring that it supports the load evenly and prevents any potential distortions that could lead to performance issues. Consistency in rib stitching helps to distribute forces evenly across the surface of the aircraft. This is essential for both strength and longevity of the fabric covering, as any irregularities in spacing can lead to stress concentrations that may compromise the airframe's structural stability. Following manufacturer specifications and guidelines also ensures compliance with regulatory standards, enhancing safety and reliability. In contrast, while some stitch types may allow for some fabric movement to accommodate expansion and contraction with temperature changes, the primary focus of rib stitching is not to be loose but rather to provide adequate support. Similarly, while rib stitching can be done by hand for better precision, it can also be accomplished using machines, depending on the construction methods employed. Lastly, the importance of rib stitching extends beyond just the wings; it is necessary wherever ribs are present in the aircraft's structure, including control surfaces and the tail, to maintain overall airworthy conditions.

2. What is the tool used to measure the size of unmarked electrical wire?

A. Caliper

B. Wire gauge

C. Multimeter

D. Micrometer

The tool specifically designed to measure the size of unmarked electrical wire is the wire gauge. This tool is calibrated to determine the diameter of electrical conductors, allowing technicians to accurately identify wire sizes, which is crucial for ensuring the proper electrical load capacity and safety in electrical systems. Wire gauges typically feature a series of holes or slots, through which the wire can be inserted. The appropriate gauge size can then be determined based on which hole the wire fits into most closely. This measurement helps in selecting the correct wire for applications based on current carrying capacity and resistance, which are vital for safe and efficient electrical installations. While calipers and micrometers can also measure the thickness of wire, they are not specialized tools for wire sizing and may not be practical in every situation, particularly with unmarked wire. A multimeter is primarily used for measuring electrical values such as voltage, resistance, and current, rather than for gauging the physical size of wire itself.

3. What is the role of warning lights in relation to fuel systems?

A. To indicate engine temperature

B. To signal low oil pressure

C. To indicate low fuel pressure or low fuel quantity

D. To monitor battery voltage

The role of warning lights in relation to fuel systems is crucial for ensuring safe aircraft operation. When a warning light indicates low fuel pressure or low fuel quantity, it alerts the pilot to potentially critical conditions that could affect engine performance or lead to fuel starvation. Low fuel pressure might indicate that the fuel pump is not delivering enough fuel to the engine, which could lead to engine failure if not addressed promptly. Similarly, a low fuel quantity warning is essential, as it informs the crew that fuel levels are insufficient for safe operation, preventing unexpected fuel exhaustion mid-flight. This system of alerts is designed to enhance situational awareness and promote timely interventions, which are vital in aviation safety. The other choices relate to different systems and parameters unrelated to fuel management. For example, engine temperature and oil pressure are monitored through separate mechanisms, and battery voltage is tracked independently to ensure electrical stability.

4. What scenario would likely activate the master caution light?

A. When exceeding cruising altitude

B. During unplanned engine shutdown

C. After landing gear retraction

D. When equipment is operating normally

The scenario that would likely activate the master caution light is during an unplanned engine shutdown. This is because the master caution light serves as a warning system that alerts the crew to potentially critical issues that require immediate attention. When an engine shuts down unexpectedly, it indicates a malfunction or failure in the engine system, which is a serious situation. The activation of the master caution light in response to this event prompts the flight crew to investigate the causes and take appropriate corrective actions to ensure the safety of the aircraft. In contrast, exceeding cruising altitude generally does not trigger the master caution light, as it is primarily related to adherence to flight regulations rather than an immediate system failure. After landing gear retraction, the landing gear indication lights, rather than the master caution light, are activated to confirm whether the gear is up or down, depending on the situation. When equipment is operating normally, there is no reason for the caution light to activate, reinforcing the system's purpose of highlighting irregularities or malfunctions that demand the crew's attention.

5. What is the purpose of using fungicidal dope when doping aircraft fabric?

A. To enhance paint adhesion

B. To prevent micro-biological deterioration of the fabric

C. To improve the finish gloss

D. To increase drying time

The purpose of using fungicidal dope when doping aircraft fabric is fundamentally to prevent micro-biological deterioration of the fabric. This type of dope contains additives that inhibit the growth of mold, mildew, and fungi, which can thrive on organic materials and imperil the structural integrity and safety of the aircraft. When aircraft fabric is exposed to moisture or humidity, there's a significant risk of microbial growth that can weaken the fabric, reduce its durability, and potentially compromise the overall safety of the aircraft. Applying a fungicidal dope creates a protective barrier that not only preserves the fabric but also extends its service life, ensuring that it remains robust in various environmental conditions. In contrast, while enhancing paint adhesion, improving finish gloss, and increasing drying time are important aspects of the doping process, these factors do not specifically address the need to protect the fabric from biological deterioration. Thus, they are secondary concerns when it comes to the primary functional aspect of fungicidal dope.

6. Which of the following is NOT a method used in forming sheet metal?

A. Stretching

B. Shaping

C. Crimping

D. Shrinking

Shaping is not traditionally recognized as a distinct method of forming sheet metal in the same way that the other options are. Stretching and shrinking are both techniques that manipulate the material to change its shape while maintaining its overall thickness. Stretching involves elongating the metal to create curves or forms, whereas shrinking compresses specific areas to create concave shapes or details. Crimping, on the other hand, involves bending the edges of the metal to join two pieces together or to create a specific profile, often used in ductwork or in automotive applications. While "shaping" may be included as a general concept in metalworking, it doesn't refer to a specific, recognized method used for forming sheet metal akin to how stretching, shrinking, and crimping are categorized. Thus, identifying shaping as the option that does not align with the recognized methods of sheet metal forming is appropriate.

7. Besides weight reduction, what is another function of a fuel jettisoning system?

A. To enhance engine efficiency

B. To balance fuel distribution between wings

C. To perform routine maintenance on fuel systems

D. To test fuel quality in the tank

A fuel jettisoning system primarily serves to manage excess weight during flight to enhance safety and performance, especially during emergencies such as an aborted landing. Another critical function of this system is to balance fuel distribution between the wings, which is essential for maintaining aircraft stability and control. Uneven fuel levels can lead to asymmetric forces on the aircraft, potentially affecting its handling characteristics and increasing the risk of adverse flight conditions. When fuel is jettisoned, it is often done in a controlled manner to ensure that both wings maintain a similar fuel load. This process helps in ensuring that the center of gravity remains within the limits and that the aircraft can operate safely under various flight conditions. Balancing fuel distribution not only aids in maintaining stability but also contributes to the overall efficiency of the aircraft's operation. The other options do not align with the primary purposes of a fuel jettisoning system. Engine efficiency is not enhanced through fuel jettisoning but rather through proper engine design and operational practices. Routine maintenance and fuel quality testing are separate processes not achieved through the jettisoning of fuel.

8. What should you check for on flex hoses during brake inspection?

A. Discoloration

B. Swelling, cracks, or soft spots

C. Length and diameter

D. Age and manufacturer

During a brake inspection, flex hoses are critical components that require careful examination for swelling, cracks, or soft spots. These imperfections can lead to potential failure of the brake system, resulting in dangerous operating conditions. Swelling indicates that the internal structure of the hose may be compromised, which can affect its ability to withstand the pressure of the brake fluid. Cracks can signal wear, fatigue, or damage that may result in leaks, while soft spots may suggest degradation of the material, which significantly weakens the integrity of the hose. Inspecting for these signs of deterioration helps ensure that the brake system remains reliable and performs effectively, as flex hoses play a vital role in transferring hydraulic pressure from the brake lines to the brake components.

9. How do you determine the appropriate type of hydraulic fluid for a specific system?

A. Externally examining the lines

B. Consulting the Aircraft Maintenance Manual or instruction plate

C. By checking the manufacturer’s website

D. Asking a co-pilot

Consulting the Aircraft Maintenance Manual or instruction plate is the best method for determining the appropriate type of hydraulic fluid for a specific system. The Aircraft Maintenance Manual (AMM) provides detailed specifications, including the type of hydraulic fluid that is compatible with the aircraft's hydraulic system. It is essential to refer to these official documents because they contain critical information that ensures safety and maintains the integrity of the hydraulic system. The instruction plate, often placed near the hydraulic reservoir or on the aircraft structure, also reflects the manufacturer’s specifications regarding fluid types. Relying on these authoritative sources minimizes the risk of using incorrect fluids that could lead to system failure, incompatibility, or even safety hazards during flight. Other methods, while they might provide some general information, do not guarantee accuracy. For example, externally examining the lines may give a visual indication of the hydraulic system but cannot provide specific or detailed information about the required fluid. Checking the manufacturer’s website could yield helpful resources, but it may not be the most reliable or immediate source for certain models or configurations. Asking a co-pilot might not offer accurate information, as they may not have the specific knowledge or documentation at hand to make an informed decision regarding the fluid type.

10. What species of wood is used as a standard for strength properties of other species of wood in aircraft structures?

A. Oak

B. Pine

C. Spruce

D. Maple

Spruce is the species of wood commonly used as a standard for strength properties in aircraft structures. It is preferred due to its favorable strength-to-weight ratio, making it particularly suitable for use in aviation. Spruce has excellent mechanical properties, including tensile strength, compressive strength, and resistance to bending, which makes it a reliable benchmark for assessing and comparing other wood species. Aircraft structures, especially in older designs, often utilize wood in components such as wings and frames. Spruce's consistent properties across different samples make it an ideal reference material, allowing engineers and designers to evaluate the structural integrity and performance of alternative wood species. This standardization helps in ensuring safety, performance, and reliability in aircraft structures.