



คำชี้แจง

เอกสารฉบับนี้เป็นปัญหาสอบสำหรับทดสอบตนเอง เพื่อให้ผู้ประสงค์สอบภาคทฤษฎีใบอนุญาตซ่อมบำรุงอากาศยานทหารใช้ทดสอบตนเองก่อนเข้ารับการสอบจริง ซึ่งอ้างอิง รูป.ที่ 100-30-01-161248 โดยจัดทำข้อสอบเป็นภาษาอังกฤษเพื่อสอดคล้องกับการปฏิบัติงานที่ใช้คู่มือการซ่อมบำรุงเป็นภาษาอังกฤษอยู่แล้วประกอบด้วยความรู้ทั่วไปเกี่ยวกับอากาศยาน (Airplane General), เครื่องยนต์อากาศยาน (Powerlant) และ โครงสร้างอากาศยาน (Airframe) รวม 100 ข้อ

Airframe

- (8021.) The strength classification of fabrics used in aircraft covering is based on
A—bearing strength.
B—shear strength.
C—tensile strength.
- (8043.) Alloy 2117 rivets are heat treated
A— by the manufacturer and do not require heat treatment before being driven.
B—by the manufacturer but require reheat treatment before being driven.
C—to a temperature of 910 to 930°F and quenched in cold water.
- (8060.) Composite inspections conducted by means of acoustic emission monitoring
A—pick up the "noise" of corrosion or other deterioration occurring.
B—analyze ultrasonic signals transmitted into the parts being inspected.
C—create sonogram pictures of the areas being inspected.
- (8071.) A potted compound repair on honeycomb can usually be made on damages less than
A—4 inches in diameter.
B—2 inches in diameter.
C—1 inch in diameter.
- (8109.) When drilling stainless steel, the drill used should have an included angle of
A—90° and turn at a low speed.
B— 118° and turn at a high speed.
C—140° and turn at a low speed.



6. (8166.) Unless otherwise specified, the radius of a bend is the
- A—inside radius of the metal being formed.
 - B—inside radius plus one-half the thickness of the metal being formed.
 - C—radius of the neutral axis plus one-half the thickness of the metal being formed.
7. (8251.) The correct dihedral angle can be determined by
- A—measuring the angular setting of each wing at the rear spar with a bubble protractor.
 - B—placing a straightedge and bubble protractor across the spars while the airplane is in flying position.
 - C—using a dihedral board and bubble level along the front spar of each wing.
8. (8274.) With which system is differential control associated?
- A—Trim.
 - B—Aileron.
 - C—Elevator.
9. (8319.) A stripe or mark applied to a wheel rim and extending onto the sidewall of a tube-type tire is a
- A—slippage mark.
 - B—wheel-to-tire balance mark.
 - C—wheel weight reference mark.
10. (8333.) When an air/oil type of landing gear shock strut is used, the initial shock of landing is cushioned by
- A—compression of the air charge.
 - B—the fluid being forced through a metered opening.
 - C—compression of the fluid.
11. (8343.) Aircraft tire pressure should be checked
- A—using only a push on stick-type gauge having 1 – pound increments.
 - B—at least once a week or more often.
 - C—as soon as possible after each flight.
12. (8369.) In shock struts, chevron seals are used to
- A—absorb bottoming effect.
 - B—prevent oil from escaping.
 - C—serve as a bearing surface.
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19. (8098.) When holes are drilled completely through Plexiglas, a
- A—standard twist drill should be used.
 - B—specially modified twist drill should be used.
 - C—wood drill should be used.
20. (8117.) When straightening members made of 2024-T4, you should
- A—straighten cold and reinforce.
 - B—straighten cold and anneal to remove stress.
 - C—apply heat to the inside of the bend.
21. (8141.) Most rivets used in aircraft construction have
- A—dimples.
 - B—smooth heads without markings.
 - C—a raised dot.
22. (8194.) A very thin and pointed tip on a soldering copper is undesirable because it will
- A—transfer too much heat to the work.
 - B—have a tendency to overheat and become brittle.
 - C—cool too rapidly.
23. (8239.) If the right wing of a monoplane is improperly rigged to a greater angle of incidence than designated in the manufacturer's specifications, it will cause the
- A—airplane to be off balance both laterally and directionally.
 - B—airplane to pitch and roll about the lateral axis.
 - C—right wing to have both an increased lift and a decreased drag.
24. (8260.) If all instructions issued by the swaging tool manufacturer are followed when swaging a cable terminal, the resultant swaged terminal strength should be
- A—the full rated strength of the cable.
 - B—80 percent of the full rated strength of the cable.
 - C—70 percent of the full rated strength of the cable.
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25. (8271.) Excessive wear on both of the sides of a control cable pulley groove is evidence of
- A—pulley misalignment.
 - B—cable misalignment.
 - C—excessive cable tension.
26. (8277.) Aircraft flight control trim systems must be designed and installed so that the
- A—pilot can determine the relative position of the trim tab from the cockpit.
 - B—operating control and the trim tab will always move in the same direction.
 - C—trim system will disengage or become inoperative if the primary flight control system fails.
27. (8354.) What should be checked when a shock strut bottoms during a landing?
- A—Air pressure.
 - B—Packing seals for correct installation.
 - C—Fluid level.
28. (8373.) An electric motor used to raise and lower a landing gear would most likely be a
- A—shunt field series-wound motor.
 - B—split field shunt-wound motor.
 - C—split field series-wound motor.
29. (8397.) Pneumatic systems utilize
- A—return lines.
 - B—relief valves.
 - C—diluter valves.
30. (8432.) The hydraulic component that automatically directs fluid from either the normal source or an emergency source to an actuating cylinder is called a
- A—bypass valve.
 - B—shuttle valve.
 - C—crossflow valve.
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31. (8443.) In a gear-type hydraulic pump, a mechanical safety device incorporated to protect the pump from overload is the
- A—bypass valve.
 - B—check valve.
 - C—shear pin.
32. (8463.) Some hydraulic systems incorporate a device which is designed to remain open to allow a normal fluid flow in the line, but closed if the fluid flow increases above an established rate. This device is generally referred to as a
- A—hydraulic fuse.
 - B—flow regulator.
 - C—metering check valve.
33. (8499.) In a freon vapor-cycle cooling system, where is cooling air obtained for the condenser?
- A—Turbine engine compressor.
 - B—Ambient air.
 - C—Pressurized cabin air.

General

34. (8019.) A 1 -horsepower, 24-volt dc electric motor that is 80 percent efficient requires 932.5 watts. How much power will a 1-horsepower, 12-volt dc electric motor that is 75 percent efficient require?
- (Note: 1 horsepower = 746 watts)
- A—932.5 watts.
 - B—1,305.5 watts.
 - C—994.6 watts.
35. (8031.) A cabin entry light of 10 watts and a dome light of 20 watts are connected in parallel to a 30-volt source. If the voltage across the 10-watt light is measured, it will be
- A—equal to the voltage across the 20-watt light.
 - B—half the voltage across the 20-watt light.
 - C—one-third of the input voltage.



36. (8107.) A specific measured distance from the datum or some other point identified by the manufacturer, to a point in or on the aircraft is called a
- A—zone number.
 - B—reference number.
 - C—station number.
37. (8140.) What type of diagram is used to explain a principle of operation, rather than show the parts as they actually appear?
- A—A pictorial diagram.
 - B—A schematic diagram.
 - C—A block diagram.
38. (8189.) If the empty weight CG of an airplane lies within the empty weight CG limits,
- A—it is necessary to calculate CG extremes.
 - B—it is not necessary to calculate CG extremes.
 - C—minimum fuel should be used in both forward and rearward CG checks.
39. (8204.) The material specifications for a certain aircraft require that a replacement oil line be fabricated from 3/4-inch 0.072 5052-0 aluminum alloy tubing. What is the inside dimension of this tubing?
- A—0.606 inch.
 - B—0.688 inch.
 - C—0.750 inch.
40. (8219.) Magnetic particle inspection is used primarily to detect
- A—distortion.
 - B—deep subsurface flaws.
 - C—flaws on or near the surface.
41. (8234.) When checking an item with the magnetic particle inspection method, circular and longitudinal magnetization should be used to
- A—reveal all possible defects.
 - B—evenly magnetize the entire part.
 - C—ensure uniform current flow.
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42. (8252.) Why is steel tempered after being hardened?
- A—To increase its hardness and ductility.
- B—To increase its strength and decrease its internal stresses.
- C—To relieve its internal stresses and reduce its brittleness.
43. (8283.) Select a characteristic of a good gas weld.
- A—The depth of penetration shall be sufficient to ensure fusion of the filler rod.
- B—The height of the weld bead should be 1/8 inch above the base metal.
- C—The weld should taper off smoothly into the base metal.
44. (8313.) Which of the following is the most satisfactory extinguishing agent for use on a carburetor or intake fire?
- A—Dry chemical.
- B—A fine, water mist.
- C—Carbon dioxide.
45. (8322.) When approaching the rear of an idling turbojet engine, the hazard area extends aft of the engine approximately
- A—200 feet.
- B—100 feet.
- C—50 feet.
46. (8331.) When taxiing (ortowing) an aircraft, a flashing white light from the control tower means
- A—move clear of the runway/taxiway immediately.
- B—OK to proceed but use extreme caution.
- C—return to starting point.
47. (8339.) What must accompany fuel vaporization?
- A—An absorption of heat.
- B—A decrease in vapor pressure.
- C—A reduction in volume.
48. (8345.) Tetraethyl lead is added to aviation gasoline to
- A—retard the formation of corrosives.
- B—improve the gasoline's performance in the engine.
- C—dissolve the moisture in the gasoline.
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49. (8356.) Fretting corrosion is most likely to occur
- A—when two surfaces fit tightly together but can move relative to one another.
 - B—only when two dissimilar metals are in contact.
 - C—when two surfaces fit loosely together and can move relative to one another.
50. (8365.) A primary cause of intergranular corrosion is
- A—improper heat treatment.
 - B—dissimilar metal contact.
 - C—improper application of primer.
51. (8021.) A 24-volt source is required to furnish 48 watts to a parallel circuit consisting of four resistors of equal value. What is the voltage drop across each resistor?
- A—12 volts.
 - B—6 volts.
 - C—24 volts.
52. (8033.) 002KV equals
- A—20 volts.
 - B—2.0 volts.
 - C—.2 volt.
53. (8037.) What unit is used to express electrical power?
- A—Volt.
 - B—Watt.
 - C—Ampere.
54. (8077.) Typical application for zener diodes is as
- A—full-wave rectifiers.
 - B—half-wave rectifiers.
 - C—voltage regulators.
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55. (8088.) A fully charged lead-acid battery will not freeze until extremely low temperatures are reached because
- A—the acid is in the plates, thereby increasing the specific gravity of the solution.
 - B—most of the acid is in the solution.
 - C— Increased internal resistance generates sufficient heat to prevent freezing.
56. (8097.) The end-of-charge voltage of a 19-cell nickel-cadmium battery, measured while still on charge,
- A—must be 1.2 to 1.3 volts per cell.
 - B—must be 1.4 volts per cell.
 - C—depends upon its temperature and the method used for charging.
57. (8099.) How can the state-of-charge of a nickel-cadmium battery be determined?
- A—By measuring the specific gravity of the electrolyte.
 - B—By a measured discharge.
 - C—By the level of the electrolyte.
58. (8108.) Which statement is true regarding an orthographic projection?
- A—There are always at least two views.
 - B—It could have as many as eight views.
 - C—One-view, two-view, and three-view drawings are the most common.
59. (8157.) In the theory of weight and balance, what is the name of the distance from the fulcrum to an object?
- A—Lever arm.
 - B—Balance arm.
 - C—Fulcrum arm.
60. (8199.) What is the color of an AN steel flared-tube fitting?
- A—Black.
 - B—Blue.
 - C—Red.
61. (8228.) What two types of indicating mediums are available for magnetic particle inspection?
- A—Iron and ferric oxides.
 - B—Wet and dry process materials.
 - C—High retentivity and low permeability material.
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62. (8245.) What type of corrosion attacks grain boundaries of aluminum alloys which are improperly or inadequately heat treated?

- A—Filiform.
- B—Intergranular.
- C—Fretting.

63. (8326.) When towing a large aircraft

- A—a person should be in the cockpit to watch for obstructions.
- B—persons should be stationed at the nose, each wing-tip, and the empennage at all times.
- C—a person should be in the cockpit to operate brakes.

64. (8341.) A fuel that vaporizes too readily may cause

- A—hard starting.
- B—detonation.
- C—vapor lock.

65. (8346.) A fuel that does not vaporize readily enough can cause

- A—vapor lock.
- B—detonation.
- C—hard starting.

66. (8353.) Select the solvent used to clean acrylics and rubber.

- A—Aliphatic naphtha.
- B—Methyl ethyl ketone.
- C—Aromatic naphtha.

Power Plant

67. (8068.) An engine misses in both the right and left positions of the magneto switch. The quickest method for locating the trouble is to

- A—check for one or more cold cylinders.
- B—perform a compression check.
- C—check each spark plug.



68. (8157.) Jet engine turbine blades removed for detailed inspection must be reinstalled in
- A—a specified slot 180° away.
 - B—a specified slot 90° away in the direction of rotation.
 - C—the same slot.
69. (8177.) Hot spots on the tail cone of a turbine engine are possible indicators of a malfunctioning fuel nozzle or
- A—a faulty combustion chamber.
 - B—a faulty igniter plug.
 - C—an improperly positioned tail cone.
70. (8314.) How does carbon dioxide (CO_2) extinguish an aircraft engine fire?
- A—Contact with the air converts the liquid into snow and gas which smothers the flame.
 - B—By lowering the temperature to a point where combustion will not take place.
 - C—The high pressure spray lowers the temperature and blows out the fire.
71. (8349.) What is used to polish commutators or slip rings?
- A—Very fine sandpaper.
 - B—Crocus cloth or fine oilstone.
 - C—Aluminum oxide or garnet paper.
72. (8373.) The generating system of an aircraft charges the battery by using
- A—constant current and varying voltage.
 - B—constant voltage and varying current.
 - C—constant voltage and constant current.
73. (8406.) A typical barrier type aircraft terminal strip is made of
- A—paper-base phenolic compound.
 - B—polyester resin and graphite compound.
 - C—layered aluminum impregnated with compound.



74. (8426.) Which of the following has the greatest effect on the viscosity of lubricating oil?
A—Temperature.
B—Pressure.
C—Volatility.
75. (8454.) Low oil pressure can be detrimental to the internal engine components. However, high oil pressure
A—should be limited to the engine manufacturer's recommendations.
B—has a negligible effect.
C—will not occur because of pressure losses around the bearings.
76. (8474.) The purpose of the flow control valve in a reciprocating engine oil system is to
A—direct oil through or around the oil cooler.
B—deliver cold oil to the hopper tank.
C—compensate for volumetric increases due to foaming of the oil.
77. (8509.) What will be the results of increasing the gap of the breaker points in a magneto?
A—Retard the spark and increase its intensity.
B—Advance the spark and decrease its intensity.
C—Retard the spark and decrease its intensity.
78. (8527.) How many secondary coils are required in a low-tension ignition system on an 18-cylinder engine?
A—36.
B—18.
C—9.
79. (8543.) In a low-tension ignition system, each spark plug requires an individual
A—capacitor.
B—breaker assembly.
C—secondary coil.
80. (8563.) Spark plugs are considered worn out when the
A—electrodes have worn away to about one-half of their original dimensions.
B—center electrode edges have become rounded.
C—electrodes have worn away to about two-thirds of their original dimensions.
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81. (8582.) In order to turn a magneto off, the primary circuit must be
- A—grounded.
 - B—opened.
 - C—shorted.
82. (8593.) Spark plug fouling caused by lead deposits occurs most often
- A—during cruise with rich mixture.
 - B—when cylinder head temperatures are relatively low.
 - C—when cylinder head temperatures are high.
83. (8634.) What factor is not used in the operation of an aircraft gas turbine engine fuel control unit?
- A—Compressor inlet air temperature.
 - B—Mixture control position.
 - C—Power lever position.
84. (8436.) What will happen to the return oil if the oil line between the scavenger pump and the oil cooler separates?
- A—Oil will accumulate in the engine.
 - B—The return oil will be pumped overboard.
 - C—The scavenger return line check valve will close and force the oil to bypass directly to the intake side of the pressure pump.
85. (8470.) Oil accumulation in the cylinders of an inverted inline engine and in the lower cylinders of a radial engine is normally reduced or prevented by
- A—reversed oil control rings.
 - B—routing the valve-operating mechanism lubricating oil to a separate scavenger pump.
 - C—extended cylinder skirts.
86. (8498.) An oil tank having a capacity of 5 gallons must have an expansion space of
- A—2 quarts.
 - B—4 quarts.
 - C—5 quarts.



87. (8546.) When removing a shielded spark plug, which of the following is most likely to be damaged?
- A—Center electrode.
 - B—Shell section.
 - C—Core insulator.
88. (8608.) At what RPM is a reciprocating engine ignition switch check made?
- A—1,500 RPM.
 - B—The slowest possible RPM.
 - C—Full throttle RPM.
89. (8641.) What should be checked/changed to ensure the validity of a turbine engine performance check if an alternate fuel is to be used?
- A—Fuel specific gravity setting.
 - B—Maximum RPM adjustment.
 - C—EPR gauge calibration.
90. (8662.) The economizer system of a float-type carburetor performs which of the following functions?
- A—It supplies and regulates the fuel required for all engine speeds.
 - B—It supplies and regulates the additional fuel required for all engine speeds above cruising.
 - C—It regulates the fuel required for all engine speeds and all altitudes.
91. (8692.) What carburetor component actually limits the desired maximum airflow to the engine at full throttle?
- A—Throttle valve.
 - B—Venturi.
 - C—Manifold intake.
92. (8711.) When a new carburetor is installed on an engine,
- A—warm up the engine and adjust the float level.
 - B—do not adjust the idle mixture setting; this was accomplished on the flow bench.
 - C—and the engine is warmed up to normal temperatures, adjust the idle mixture, then the idle speed.



93. (8755.) Fuel crossfeed systems are used in aircraft to
- A—purge the fuel tanks.
 - B—jettison fuel in an emergency.
 - C—maintain aircraft stability.
94. (8841.) Which statement is true regarding the air passing through the combustion section of a jet engine?
- A—Most is used for engine cooling.
 - B—Most is used to support combustion.
 - C—A small percentage is frequently bled off at this point to be used for air-conditioning and/or other
95. (8953.) The centrifugal twisting force acting on a propeller blade is
- A—greater than the aerodynamic twisting force and tends to move the blade to a higher angle.
 - B—less than the aerodynamic twisting force and tends to move the blade to a lower angle.
 - C—greater than the aerodynamic twisting force and tends to move the blade to a lower angle.
96. (8963.) Counterweights on constant-speed propellers are generally used to aid in
- A—increasing blade angle.
 - B—decreasing blade angle.
 - C—unfeathering the propellers.
97. (8974.) On aircraft equipped with hydraulically operated constant-speed propellers, all ignition and magneto checking is done with the propeller in which position?
- A—High RPM.
 - B—Low RPM.
 - C—High pitch range.
98. (8979.) A fixed-pitch wooden propeller that has been properly installed and the attachment bolts properly torqued exceeds the out-of-track allowance by 1/16 inch. The excessive out-of-track condition may be corrected by
- A—slightly overtightening the attachment bolts adjacent to the most forward blade.
 - B—discarding the propeller since out-of-track conditions cannot be corrected.
 - C—placing shims between the inner flange and the propeller.



99. (8990.) What method would be used to inspect an aluminum propeller blade when a crack is suspected?

- A—Use a bright light.
- B—Magnetic particle.
- C—Dye-penetrant.

100. (8999.) An APU is usually rotated during start by

- A—a turbine impingement system.
- B—a pneumatic starter.
- C—an electric starter.