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AVIATION MECHANIC GENERAL
Airmen Knowledge Test Question Bank

Please Note:
Subject matter codes appear above each item.

A.8.0.0.1.a.1 A01
The working voltage of a capacitor in an ac circuit should be
A. equal to the highest applied voltage.
B. at least 20 percent greater than the highest applied voltage.
C. at least 50 percent greater than the highest applied voltage.

A.8.0.0.2.a.1 A01
The term that describes the combined resistive forces in an ac circuit is
A. resistance.
B. reactance.
C. impedance.

A.8.0.0.3.a.1 A01
The basis for transformer operation in the use of alternating current is mutual
A. inductance.
B. capacitance.
C. reactance.

A.8.0.0.4.a.1 A01
The opposition offered by a coil to the flow of alternating current is called (disregard resistance)
A. impedance.
B. reluctance.
C. inductive reactance.

A.8.0.0.5.a.1 A01
An increase in which of the following factors will cause an increase in the inductive reactance of a circuit?
A. Inductance and frequency.
B. Resistance and voltage.
C. Resistance and capacitive reactance.

A.8.0.0.6.a.1 A01
(Refer to figure 1.) When different rated capacitors are connected in series in a circuit, the total capacitance is
A. less than the capacitance of the lowest rated capacitor.

B. greater than the capacitance of the highest rated capacitor.
C. equal to the sum of all the capacitances.

A.8.0.0.7.a.1 A01
In an ac circuit, the effective voltage is
A. equal to the maximum instantaneous voltage.
B. greater than the maximum instantaneous voltage.
C. less than the maximum instantaneous voltage.

A.8.0.0.8.a.1 A01
The amount of electricity a capacitor can store is directly proportional to the
A. distance between the plates and inversely proportional to the plate area.
B. plate area and is not affected by the distance between the plates.
C. plate area and inversely proportional to the distance between the plates.

A.8.0.0.9.a.1 A01
(Refer to figure 2.) What is the total capacitance of a certain circuit containing three capacitors with capacitances of .02 microfarad, .05 microfarad, and .10 microfarad, respectively?
A. 5.88 μF.
B. 0.125 pF.
C. .0125 μF.

A.8.0.1.0.a.1 A01
Unless otherwise specified, any values given for current or voltage in an ac circuit are assumed to be
A. instantaneous values.
B. effective values.
C. maximum values.

A.8.0.1.1.a.1 A01
When different rated capacitors are connected in parallel in a circuit, the total capacitance is
(Note: CT = C1 + C2 + C3 . . .)
A. less than the capacitance of the lowest rated capacitor.
B. equal to the capacitance of the highest rated capacitor.
C. equal to the sum of all the capacitances.

A.8.0.1.2.a.1 A01
When inductors are connected in series in a circuit, the total inductance is (where the magnetic fields of each inductor do not affect the others)
(Note: LT = L1 + L2 + L3 . . .)
A. less than the inductance of the lowest rated inductor.
B. equal to the inductance of the highest rated inductor.
C. equal to the sum of the individual inductances.

A.8.0.1.3.a.1 A01
(Refer to figure 3.) When more than two inductors of different inductances are connected in parallel in a circuit, the total inductance is

A. less than the inductance of the lowest rated inductor.
B. equal to the inductance of the highest rated inductor.
C. equal to the sum of the individual inductances.

A.8.0.1.4.a.1 A01
What is the total capacitance of a certain circuit containing three capacitors with capacitances of .25 microfarad, .03 microfarad, and .12 microfarad, respectively?
(Note: CT = C1 + C2 + C3)
A. .4 μF.
B. .04 pF.
C. .04 μF.

A.8.0.1.5.a.1 A02
Which requires the most electrical power during operation?
(Note: 1 horsepower = 746 watts)
A. A 12-volt motor requiring 8 amperes.
B. Four 30-watt lamps in a 12-volt parallel circuit.
C. Two lights requiring 3 amperes each in a 24-volt parallel system.

A.8.0.1.6.a.1 A02
How much power must a 24-volt generator furnish to a system which contains the following loads?

UNIT	RATING
One motor (75 percent efficient)	1/5 hp
Three position lights	20 watts each
One heating element	5 amp
One anticollision light	3 amp

(Note: 1 horsepower = 746 watts)
A. 402 watts.
B. 385 watts.
C. 450 watts.

A.8.0.1.7.a.1 A02
A 12-volt electric motor has 1,000 watts input and 1 horsepower output. Maintaining the same efficiency, how much input power will a 24-volt, 1-horsepower electric motor require?
(Note: 1 horsepower = 746 watts)
A. 1,000 watts.
B. 2,000 watts.
C. 500 watts.

A.8.0.1.8.a.1 A02
How many amperes will a 28-volt generator be required to supply to a circuit containing five lamps in parallel, three of which have a resistance of 6 ohms each and two of which have a resistance of 5 ohms each?
A. 1.11 amperes.
B. 1 ampere.
C. 25.23 amperes.

A.8.0.1.9.a.1 A02
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.

A.8.0.2.0.a.1 A02
The potential difference between two conductors which are insulated from each other is measured in
A. volts.
B. amperes.
C. coulombs.

A.8.0.2.1.a.1 A02
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. 3 volts.
C. 24 volts.

A.8.0.2.2.a.1 A02
When calculating power in a reactive or inductive ac circuit, the true power is
A. more than the apparent power.
B. less than the apparent power in a reactive circuit and more than the apparent power in an inductive circuit.
C. less than the apparent power.

A.8.0.2.3.a.1 A02
(Refer to figure 4.) How much power is being furnished to the circuit?
A. 575 watts.
B. 2,875 watts.
C. 2,645 watts.

A.8.0.2.4.a.1 A02
(Refer to figure 5.) What is the impedance of an ac series circuit consisting of an inductor with a reactance of 10 ohms, a capacitor with a reactance of 4 ohms, and a resistor with a resistance of 8 ohms?
A. 22 ohms.
B. 5.29 ohms.
C. 10 ohms.

A.8.0.2.5.a.1 A03
(Refer to figure 6.) If resistor R5 is disconnected at the junction of R4 and R3 as shown, what will the ohmmeter read?
A. 2.76 ohms.
B. 3 ohms.
C. 12 ohms.

A.8.0.2.6.a.1 A03
(Refer to figure 7.) If resistor R3 is disconnected at terminal D, what will the ohmmeter read?
A. Infinite resistance.
B. 10 ohms.
C. 20 ohms.

A.8.0.2.7.a.1 A03
(Refer to figure 8.) With an ohmmeter connected into the circuit as shown, what will the ohmmeter read?
A. 20 ohms.
B. Infinite resistance.
C. 10 ohms.

A.8.0.2.8.a.1 A03
(Refer to figure 9.) How many instruments (voltmeters and ammeters) are installed correctly?
A. Three.
B. One.
C. Two.

A.8.0.2.9.a.1 A03
The correct way to connect a test voltmeter in a circuit is
A. in series with a unit.
B. between source voltage and the load.
C. in parallel with a unit.

A.8.0.3.0.a.1 A03
Which term means .001 ampere?
A. Microampere.
B. Kiloampere.
C. Milliampere.

A.8.0.3.1.a.1 A03
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.

A.8.0.3.2.a.1 A03
A 14 ohm resistor is to be installed in a series circuit carrying .05 ampere. How much power will the resistor be required to dissipate?
A. At least .70 milliwatt.
B. At least 35 milliwatts.
C. Less than .035 watt.

A.8.0.3.3.a.1 A03
.002KV equals

A. 20 volts.
B. 2.0 volts.
C. .2 volt.

A.8.0.3.4.a.1 A03
(Refer to figure 10.) What is the measured voltage of the series parallel circuit between terminals A and B?
A. 1.5 volts.
B. 3.0 volts.
C. 4.5 volts.

A.8.0.3.5.a.1 A04
A 24-volt source is required to furnish 48 watts to a parallel circuit consisting of two resistors of equal value. What is the value of each resistor?
(Note: Rt = E2/P)
A. 24 ohms.
B. 12 ohms.
C. 6 ohms.

A.8.0.3.6.a.1 A04
Which requires the most electrical power?
(Note: 1 horsepower = 746 watts)
A. Four 30 watt lamps arranged in a 12-volt parallel circuit.
B. A 1/10 horsepower, 24-volt motor which is 75 percent efficient.
C. A 24-volt anticollision light circuit consisting of two light assemblies which require 3 amperes each during operation.

A.8.0.3.7.a.1 A04
What unit is used to express electrical power?
A. Volt.
B. Watt.
C. Ampere.

A.8.0.3.8.a.1 A04
What is the operating resistance of a 30-watt light bulb designed for a 28-volt system?
A. 1.07 ohms.
B. 26 ohms.
C. 0.93 ohm.

A.8.0.3.9.a.1 A04
Which statement is correct when made in reference to a parallel circuit?
A. The current is equal in all portions of the circuit.
B. The total current is equal to the sum of the currents through the individual branches of the circuit.
C. The current in amperes can be found by dividing the EMF in volts by the sum of the resistors in ohms.

A.8.0.4.0.a.1 A04

Diodes are used in electrical power circuits primarily as
A. cutout switches.
B. rectifiers.
C. relays.

A.8.0.4.1.a.1 A04
Transfer of electrical energy from one conductor to another without the aid of electrical connections
A. is called induction.
B. is called airgap transfer.
C. will cause excessive arcing and heat, and as a result is impractical.

A.8.0.4.2.a.1 A04
If three resistors of 3 ohms, 5 ohms, and 22 ohms are connected in series in a 28-volt circuit, how much current will flow through the 3-ohm resistor?
A. 9.3 amperes.
B. 1.05 amperes.
C. 0.93 ampere.

A.8.0.4.3.a.1 A04
A circuit has an applied voltage of 30 volts and a load consisting of a 10 ohm resistor in series with a 20-ohm resistor. What is the voltage drop across the 10-ohm resistor?
A. 10 volts.
B. 20 volts.
C. 30 volts.

A.8.0.4.4.a.1 A04
(Refer to figure 11.) Find the total current flowing in the wire between points C and D.
A. 6.0 amperes.
B. 2.4 amperes.
C. 3.0 amperes.

A.8.0.4.5.a.1 A04
(Refer to figure 11.) Find the voltage across the 8-ohm resistor.
A. 8 volts.
B. 20.4 volts.
C. 24 volts.

A.8.0.4.6.a.1 A04
(Refer to figure 12.) Find the total resistance of the circuit.
A. 16 ohms.
B. 2.6 ohms.
C. 21.2 ohms.

A.8.0.4.7.a.1 A04
Which is correct in reference to electrical resistance?
A. Two electrical devices will have the same combined resistance if they are connected in series as they will have if connected in parallel.

B. If one of three bulbs in a parallel lighting circuit is removed, the total resistance of the circuit will become greater.
C. An electrical device that has a high resistance will use more power than one with a low resistance with the same applied voltage.

A.8.0.4.8.a.1 A04
What happens to the current in a voltage step up transformer with a ratio of 1 to 4?
A. The current is stepped down by a 1 to 4 ratio.
B. The current is stepped up by a 1 to 4 ratio.
C. The current does not change.

A.8.0.4.9.a.1 A04
(Refer to figure 13.) Determine the total current flow in the circuit.
A. 0.2 ampere.
B. 1.4 amperes.
C. 0.8 ampere.

A.8.0.5.0.a.1 A04
(Refer to figure 14.) The total resistance of the circuit is
A. 25 ohms.
B. 35 ohms.
C. 17 ohms.

A.8.0.5.1.a.1 A04
Which of these will cause the resistance of a conductor to decrease?
A. Decrease the length or the cross sectional area.
B. Decrease the length or increase the cross sectional area.
C. Increase the length or decrease the cross sectional area.

A.8.0.5.2.a.1 A04
Through which material will magnetic lines of force pass the most readily?
A. Copper.
B. Iron.
C. Aluminum.

A.8.0.5.3.a.1 A04
A 48-volt source is required to furnish 192 watts to a parallel circuit consisting of three resistors of equal value. What is the value of each resistor?
A. 36 ohms.
B. 4 ohms.
C. 12 ohms.

A.8.0.5.4.a.1 A04
Which is correct concerning a parallel circuit?
A. Total resistance will be smaller than the smallest resistor.
B. Total resistance will decrease when one of the resistances is removed.
C. Total voltage drop is the same as the total resistance.

A.8.0.5.5.a.1 A04
The voltage drop in a conductor of known resistance is dependent on
A. the voltage of the circuit.
B. only the resistance of the conductor and does not change with a change in either voltage or amperage.
C. the amperage of the circuit.

A.8.0.5.6.a.1 A05
A thermal switch, as used in an electric motor, is designed to
A. close the integral fan circuit to allow cooling of the motor.
B. open the circuit in order to allow cooling of the motor.
C. reroute the circuit to ground.

A.8.0.5.7.a.1 A05
(Refer to figure 15.) With the landing gear retracted, the red indicator light will not come on if an open occurs in wire
A. No. 19.
B. No. 7.
C. No. 17.

A.8.0.5.8.a.1 A05
(Refer to figure 15.) The No. 7 wire is used to
A. complete the PUSH TO TEST circuit.
B. open the UP indicator light circuit when the landing gear is retracted.
C. close the UP indicator light circuit when the landing gear is retracted.

A.8.0.5.9.a.1 A05
(Refer to figure 15.) When the landing gear is down, the green light will not come on if an open occurs in wire
A. No. 7.
B. No. 6.
C. No. 17.

A.8.0.6.0.a.1 A05
(Refer to figure 16.) What will be the effect if the PCO relay fails to operate when the left hand tank is selected?
A. The fuel pressure crossfeed valve will not open.
B. The fuel tank crossfeed valve open light will illuminate.
C. The fuel pressure crossfeed valve open light will not illuminate.

A.8.0.6.1.a.1 A05
(Refer to figure 16.) The TCO relay will operate if 24 volts dc is applied to the bus and the fuel tank selector is in the
A. right hand tank position.
B. crossfeed position.
C. left hand tank position.

A.8.0.6.2.a.1 A05
(Refer to figure 16.) With power to the bus and the fuel selector switched to the right hand tank, how many relays in the system are operating?
A. Three.
B. Two.
C. Four.

A.8.0.6.3.a.1 A05
(Refer to figure 16.) When electrical power is applied to the bus, which relays are energized?
A. PCC and TCC.
B. TCC and TCO.
C. PCO and PCC.

A.8.0.6.4.a.1 A05
(Refer to figure 16.) Energize the circuit with the fuel tank selector switch selected to the left hand position. Using the schematic, identify the switches that will change position.
A. 5, 9, 10, 11, 12, 13, 15.
B. 3, 5, 6, 7, 11, 13.
C. 5, 6, 11, 12, 13, 15, 16.

A.8.0.6.5.a.1 A05
(Refer to figure 17.) Which of the components is a potentiometer?
A. 5.
B. 3.
C. 11.

A.8.0.6.6.a.1 A05
(Refer to figure 17.) The electrical symbol represented at number 5 is a variable
A. inductor.
B. resistor.
C. capacitor.

A.8.0.6.7.a.1 A05
(Refer to figure 18.) When the landing gears are up and the throttles are retarded, the warning horn will not sound if an open occurs in wire
A. No. 4.
B. No. 2.
C. No. 9.

A.8.0.6.8.a.1 A05
(Refer to figure 18.) The control valve switch must be placed in the neutral position when the landing gears are down to
A. permit the test circuit to operate.
B. prevent the warning horn from sounding when the throttles are closed.
C. remove the ground from the green light.

A.8.0.6.9.a.1 A05
(Refer to figure 19.) Under which condition will a ground be provided for the warning horn through both gear switches when the throttles are closed?
A. Right gear up and left gear down.
B. Both gears up and the control valve out of neutral.
C. Left gear up and right gear down.

A.8.0.7.0.a.1 A05
(Refer to figure 19.) When the throttles are retarded with only the right gear down, the warning horn will not sound if an open occurs in wire
A. No. 5.
B. No. 13.
C. No. 6.

A.8.0.7.1.a.1 A05
(Refer to figure 19.) When the landing gears are up and the throttles are retarded, the warning horn will not sound if an open occurs in wire
A. No. 5.
B. No. 7.
C. No. 6.

A.8.0.7.2.a.1 A05
When referring to an electrical circuit diagram, what point is considered to be at zero voltage?
A. The circuit breaker.
B. The fuse.
C. The ground reference.

A.8.0.7.3.a.1 A05
(Refer to figure 20.) Troubleshooting an open circuit with a voltmeter as shown in this circuit will
A. permit current to flow and illuminate the lamp.
B. create a low resistance path and the current flow will be greater than normal.
C. permit the battery voltage to appear on the voltmeter.

A.8.0.7.4.a.1 A05
(Refer to figure 21.) Which symbol represents a variable resistor?
A. 2.
B. 1.
C. 3.

A.8.0.7.5.a.1 A05
In a P-N-P transistor application, the solid state device is turned on when the
A. base is negative with respect to the emitter.
B. base is positive with respect to the emitter.
C. emitter is negative with respect to the base.

A.8.0.7.6.a.1 A05
In an N-P-N transistor application, the solid state device is turned on when the

A. emitter is positive with respect to the base.
B. base is negative with respect to the emitter.
C. base is positive with respect to the emitter.

A.8.0.7.7.a.1 A05
Typical application for zener diodes is as
A. full-wave rectifiers.
B. half-wave rectifiers.
C. voltage regulators.

A.8.0.7.8.a.1 A05
(Refer to figure 22.) Which illustration is correct concerning bias application and current flow?
A. 1.
B. 2.
C. 3.

A.8.0.7.9.a.1 A05
Forward biasing of a solid state device will cause the device to
A. conduct via zener breakdown.
B. conduct.
C. turn off.

A.8.0.8.0.a.1 A05
(Refer to figure 23.) If an open occurs at R1, the light
A. cannot be turned on.
B. will not be affected.
C. cannot be turned off.

A.8.0.8.1.a.1 A05
(Refer to figure 23.) If R2 sticks in the up position, the light will
A. be on full bright.
B. be very dim.
C. not illuminate.

A.8.0.8.2.a.1 A05
(Refer to figure 24.) Which statement concerning the depicted logic gate is true?
A. Any input being 1 will produce a 0 output.
B. Any input being 1 will produce a 1 output.
C. All inputs must be 1 to produce a 1 output.

A.8.0.8.3.a.1 A05
(Refer to figure 25.) In a functional and operating circuit, the depicted logic gate's output will be 0
A. only when all inputs are 0.
B. when all inputs are 1.
C. when one or more inputs are 0.

A.8.0.8.4.a.1 A05
(Refer to figure 26.) Which of the logic gate output conditions is correct with respect to the given inputs?
A. 1.
B. 2.
C. 3.

A.8.0.8.5.a.1 A06
A lead acid battery with 12 cells connected in series (no load voltage = 2.1 volts per cell) furnishes 10 amperes to a load of 2-ohms resistance. The internal resistance of the battery in this instance is
A. 0.52 ohm.
B. 2.52 ohms.
C. 5.0 ohms.

A.8.0.8.6.a.1 A06
If electrolyte from a lead-acid battery is spilled in the battery compartment, which procedure should be followed?
A. Apply boric acid solution to the affected area followed by a water rinse.
B. Rinse the affected area thoroughly with clean water.
C. Apply sodium bicarbonate solution to the affected area followed by a water rinse.

A.8.0.8.7.a.1 A06
Which statement regarding the hydrometer reading of a lead acid storage battery electrolyte is true?
A. The hydrometer reading does not require a temperature correction if the electrolyte temperature is 80 °F.
B. A specific gravity correction should be subtracted from the hydrometer reading if the electrolyte temperature is above 20°F.
C. The hydrometer reading will give a true indication of the capacity of the battery regardless of the electrolyte temperature.

A.8.0.8.8.a.1 A06
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.

A.8.0.8.9.a.1 A06
What determines the amount of current which will flow through a battery while it is being charged by a constant voltage source?
A. The total plate area of the battery.
B. The state of charge of the battery.
C. The ampere hour capacity of the battery.

A.8.0.9.0.a.1 A06
Which of the following statements is/are generally true regarding the charging of several aircraft batteries together?
1. Batteries of different voltages (but similar capacities) can be connected in series with each other across the charger, and charged using the constant current method.

2. Batteries of different ampere-hour capacity and same voltage can be connected in parallel with each other across the charger, and charged using the constant voltage method.
3. Batteries of the same voltage and same ampere-hour capacity must be connected in series with each other across the charger, and charged using the constant current method.

A. 3.
B. 2 and 3.
C. 1 and 2.

A.8.0.9.1.a.1 A06
The method used to rapidly charge a nickel cadmium battery utilizes
A. constant current and constant voltage.
B. constant current and varying voltage.
C. constant voltage and varying current.

A.8.0.9.2.a.1 A06
If an aircraft ammeter shows a full charging rate, but the battery remains in a discharged state, the most likely cause is
A. a shorted battery relay.
B. an internally shorted battery.
C. a shorted generator field circuit.

A.8.0.9.3.a.1 A06
Which condition is an indication of improperly torqued cell link connections of a nickel cadmium battery?
A. Light spewing at the cell caps.
B. Toxic and corrosive deposits of potassium carbonate crystals.
C. Heat or burn marks on the hardware.

A.8.0.9.4.a.1 A06
The presence of small amounts of potassium carbonate deposits on the top of nickel cadmium battery cells that have been in service for a time is an indication of
A. normal operation.
B. excessive gassing.
C. excessive plate sulfation.

A.8.0.9.5.a.1 A06
The servicing and charging of nickel-cadmium and lead acid batteries together in the same service area is likely to result in
A. normal battery service life.
B. increased explosion and/or fire hazard.
C. contamination of both types of batteries.

A.8.0.9.6.a.1 A06
The electrolyte of a nickel cadmium battery is the lowest when the battery is
A. being charged.
B. in a discharged condition.
C. under load condition.

A.8.0.9.7.a.1 A06
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.

A.8.0.9.8.a.1 A06
Nickel cadmium batteries which are stored for a long period of time will show a low fluid level because the
A. fluid evaporates through the vents.
B. fluid level was not periodically replenished.
C. electrolyte becomes absorbed in the plates.

A.8.0.9.9.a.1 A06
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.

A.8.1.0.0.a.1 A06
What may result if water is added to a nickel cadmium battery when it is not fully charged?
A. Excessive electrolyte dilution.
B. Excessive spewing is likely to occur during the charging cycle.
C. No adverse effects since water may be added anytime.

A.8.1.0.1.a.1 A06
In nickel cadmium batteries, a rise in cell temperature
A. causes an increase in internal resistance.
B. causes a decrease in internal resistance.
C. increases cell voltage.

A.8.1.0.2.a.1 A06
When a charging current is applied to a nickel cadmium battery, the cells emit gas only
A. toward the end of the charging cycle.
B. when the electrolyte level is low.
C. if they are defective.

B.8.1.0.3.a.1 B01
What type of line is normally used in a mechanical drawing or blueprint to represent an edge or object not visible to the viewer?
A. Medium weight dashed line.
B. Light solid line.
C. Alternate short and long light dashes.

B.8.1.0.4.a.1 B01

(Refer to figure 27.) In the isometric view of a typical aileron balance weight, identify the view indicated by the arrow.
A. 1.
B. 3.
C. 2.

B.8.1.0.5.a.1 B01
(1) A detail drawing is a description of a single part.
(2) An assembly drawing is a description of an object made up of two or more parts.

Regarding the above statements,
A. only No. 1 is true.
B. neither No. 1 nor No. 2 is true.
C. both No. 1 and No. 2 are true.

B.8.1.0.6.a.1 B01
(Refer to figure 28.) Identify the bottom view of the object shown.
A. 1.
B. 3.
C. 2.

B.8.1.0.7.a.1 B01
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. specification number.
C. station number.

B.8.1.0.8.a.1 B01
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.

B.8.1.0.9.a.1 B01
(Refer to figure 29.) Identify the left side view of the object shown.
A. 1.
B. 2.
C. 3.

B.8.1.1.0.a.1 B01
A line used to show an edge which is not visible is a
A. phantom line.
B. hidden line.
C. break line.

B.8.1.1.1.a.1 B01

(Refer to figure 30.) Identify the bottom view of the object.
A. 1.
B. 2.
C. 3.

B.8.1.1.2.a.1 B01
(1) Schematic diagrams indicate the location of individual components in the aircraft.
(2) Schematic diagrams indicate the location of components with respect to each other within the system.

Regarding the above statements,
A. only No. 1 is true.
B. both No. 1 and No. 2 are true.
C. only No. 2 is true.

B.8.1.1.3.a.1 B02
(Refer to figure 31.) What are the proper procedural steps for sketching repairs and alterations?
A. 3, 1, 4, 2.
B. 4, 2, 3, 1.
C. 1, 3, 4, 2.

B.8.1.1.4.a.1 B02
Which statement is applicable when using a sketch for making a part?
A. The sketch may be used only if supplemented with three view orthographic projection drawings.
B. The sketch must show all information to manufacture the part.
C. The sketch need not show all necessary construction details.

B.8.1.1.5.a.1 B02
(Refer to figure 32.) What is the next step required for a working sketch of the illustration?
A. Darken the object outlines.
B. Sketch extension and dimension lines.
C. Add notes, dimensions, title, and date.

B.8.1.1.6.a.1 B02
In orthographic projection drawings, it is often possible to portray an object clearly by the use of three views. When three view projection is used, which views are usually shown?
A. Front, left side, and right side.
B. Top, front, and right side.
C. Front, back, and left side.

B.8.1.1.7.a.1 B02
What should be the first step of the procedure in sketching an aircraft wing skin repair?
A. Draw heavy guidelines.
B. Lay out the repair.
C. Block in the views.

B.8.1.1.8.a.1 B02

(1) According to FAR Part 91, repairs to an aircraft skin should have a detailed dimensional sketch included in the permanent records.
(2) On occasion, a mechanic may need to make a simple sketch of a proposed repair to an aircraft, a new design, or a modification.

Regarding the above statements,
A. only No. 1 is true.
B. only No. 2 is true.
C. both No. 1 and No. 2 are true.

B.8.1.1.9.a.1 B02
Working drawings may be divided into three classes. They are:
A. title drawings, installation drawings, and assembly drawings.
B. detail drawings, assembly drawings, and installation drawings.
C. orthographic projection drawings, pictorial drawings, and detail drawings.

B.8.1.2.0.a.1 B02
A sketch is frequently drawn for use in
A. manufacturing a replacement part.
B. training of an airframe mechanic.
C. identifying the person drawing the sketch.

B.8.1.2.1.a.1 B02
What material symbol is frequently used in drawings to represent all metals?
A. Steel.
B. Cast iron.
C. Aluminum.

B.8.1.2.2.a.1 B02
(Refer to figure 33.) Which material section line symbol indicates cast iron?
A. 1.
B. 2.
C. 3.

B.8.1.2.3.a.1 B03
(Refer to figure 34.) What is the dimension of the chamfer?
A. 1/16 X 37°.
B. 0.3125 + .005 -0.
C. 0.0625 X 45°.

B.8.1.2.4.a.1 B03
(Refer to figure 34.) What is the maximum diameter of the hole for the clevis pin?
A. 0.3175.
B. 0.3130.
C. 0.31255.

B.8.1.2.5.a.1 B03
(Refer to figure 34.) What would be the minimum diameter of 4130 round stock required for the construction of the clevis that would produce a machined surface?
A. 55/64 inch.
B. 1 inch.
C. 7/8 inch.

B.8.1.2.6.a.1 B03
(Refer to figure 34.) Using the information, what size drill would be required to drill the clevis bolthole?
A. 5/16 inch.
B. 21/64 inch.
C. 1/2 inch.

B.8.1.2.7.a.1 B03
What are the means of conveying measurements through the medium of drawings?
A. Dimensions.
B. Tolerances.
C. Edge distances.

B.8.1.2.8.a.1 B03
(Refer to figure 35.) Identify the extension line.
A. 3.
B. 1.
C. 4.

B.8.1.2.9.a.1 B03
(Refer to figure 36.) The diameter of the holes in the finished object is
A. 3/4 inch.
B. 31/64 inch.
C. 1/2 inch.

B.8.1.3.0.a.1 B03
Zone numbers on aircraft blueprints are used to
A. locate parts, sections, and views on large drawings.
B. indicate different sections of the aircraft.
C. locate parts in the aircraft.

B.8.1.3.1.b.1 B03
One purpose for schematic diagrams is to show the
A. functional location of components within a system.
B. physical location of components within a system.
C. size and shape of components within a system.

B.8.1.3.2.a.1 B03
When reading a blueprint, a dimension is given as 4.387 inches + .005 - .002. Which statement is true?
A. The maximum acceptable size is 4.385 inches.

B. The minimum acceptable size is 4.385 inches.
C. The maximum acceptable size is 4.389 inches.

B.8.1.3.3.a.1 B03
What is the allowable manufacturing tolerance for a bushing where the outside dimensions shown on the blueprint are:

1.0625 + .0025– .0003?

A. .0028.
B. 1.0650.
C. 1.0647.

B.8.1.3.4.a.1 B03
A hydraulic system schematic drawing would indicate the
A. specific location of the individual components within the aircraft.
B. direction of fluid flow through the system.
C. type and quantity of the hydraulic fluid.

B.8.1.3.5.a.1 B03
(Refer to figure 37.) The vertical distance between the top of the plate and the bottom of the lowest 15/64 inch hole is
A. 2.250.
B. 2.242.
C. 2.367.

B.8.1.3.6.a.1 B03
(1) A measurement should not be scaled from an aircraft print because the paper shrinks or stretches when the print is made.
(2) When a detail drawing is made, it is carefully and accurately drawn to scale, and is dimensioned.

Regarding the above statements,
A. only No. 2 is true.
B. both No. 1 and No. 2 are true.
C. neither No. 1 nor No. 2 is true.

B.8.1.3.7.a.1 B03
The drawings often used in illustrated parts manuals are
A. exploded view drawings.
B. block drawings.
C. detail drawings.

B.8.1.3.8.a.1 B03
A drawing in which the subassemblies or parts are shown as brought together on the aircraft is called
A. a sectional drawing.
B. a detail drawing.
C. an installation drawing.

B.8.1.3.9.a.1 B03
What type of diagram shows the wire size required for a particular installation?
A. A block diagram.
B. A schematic diagram.
C. A wiring diagram.

B.8.1.4.0.a.1 B03
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.

B.8.1.4.1.b.1 B03
In the reading of aircraft blueprints, the term “tolerance”, used in association with aircraft parts or components,
A. is the tightest permissible fit for proper construction and operation of mating parts.
B. is the difference between extreme permissible dimensions that a part may have and still be acceptable.
C. represents the limit of galvanic compatibility between different adjoining material types in aircraft parts.

B.8.1.4.2.a.1 B04
(Refer to figure 38.) An aircraft reciprocating engine has a 1,830 cubic inch displacement and develops 1,250 brake horsepower at 2,500 RPM. What is the brake mean effective pressure?
A. 217.
B. 205.
C. 225.

B.8.1.4.3.a.1 B04
(Refer to figure 38.) An aircraft reciprocating engine has a 2,800 cubic inch displacement, develops 2,000 brake horsepower, and indicates 270 brake mean effective pressure. What is the engine speed (RPM)?
A. 2,200.
B. 2,100.
C. 2,300.

B.8.1.4.4.a.1 B04
(Refer to figure 38.) An aircraft reciprocating engine has a 2,800 cubic inch displacement and develops 2,000 brake horsepower at 2,200 RPM. What is the brake mean effective pressure?
A. 257.5.
B. 242.5.
C. 275.0.

B.8.1.4.5.a.1 B04
(Refer to figure 39.) Determine the cable size of a 40-foot length of single cable in free air, with a continuous rating, running from a bus to the equipment in a 28-volt system with a 15-ampere load and a 1-volt drop.
A. No. 10.
B. No. 11.

C. No. 18.

B.8.1.4.6.a.1 B04
(Refer to figure 39.) Determine the maximum length of a No. 16 cable to be installed from a bus to the equipment in a 28-volt system with a 25-ampere intermittent load and a 1-volt drop.
A. 8 feet.
B. 10 feet.
C. 12 feet.

B.8.1.4.7.a.1 B04
(Refer to figure 39.) Determine the minimum wire size of a single cable in a bundle carrying a continuous current of 20 amperes 10 feet from the bus to the equipment in a 28-volt system with an allowable 1-volt drop.
A. No. 12.
B. No. 14.
C. No. 16.

B.8.1.4.8.a.1 B04
(Refer to figure 39.) Determine the maximum length of a No. 12 single cable that can be used between a 28-volt bus and a component utilizing 20 amperes continuous load in free air with a maximum acceptable 1-volt drop.
A. 22.5 feet.
B. 26.5 feet.
C. 12.5 feet.

B.8.1.4.9.b.1 B04
(Refer to figure 40.) Determine the proper tension for a 1/8-inch cable (7 x 19) if the temperature is 80°F.
A. 70 pounds.
B. 75 pounds.
C. 80 pounds.

B.8.1.5.0.a.1 B04
(Refer to figure 40.) Determine the proper tension for a 3/16-inch cable (7 x 19 extra flex) if the temperature is 87°F.
A. 135 pounds.
B. 125 pounds.
C. 140 pounds.

B.8.1.5.1.a.1 B04
(Refer to figure 41.) Determine how much fuel would be required for a 30-minute reserve operating at 2,300 RPM.
A. 25.3 pounds.
B. 35.5 pounds.
C. 49.8 pounds.

B.8.1.5.2.a.1 B04

(Refer to figure 41.) Determine the fuel consumption with the engine operating at cruise, 2,350 RPM.
A. 49.2 pounds per hour.
B. 51.2 pounds per hour.
C. 55.3 pounds per hour.

C.8.1.5.3.a.1 C01
When computing weight and balance, an airplane is considered to be in balance when
A. the average moment arm of the loaded airplane falls within its CG range.
B. all moment arms of the plane fall within CG range.
C. the movement of the passengers will not cause the moment arms to fall outside the CG range.

C.8.1.5.4.a.1 C01
What tasks are completed prior to weighing an aircraft to determine its empty weight?
A. Remove all items except those on the aircraft equipment list; drain fuel and hydraulic fluid.
B. Remove all items on the aircraft equipment list; drain fuel, compute oil and hydraulic fluid weight.
C. Remove all items except those on the aircraft equipment list; drain fuel and fill hydraulic reservoir.

C.8.1.5.5.a.1 C01
The useful load of an aircraft consists of the
A. crew, usable fuel, passengers, and cargo.
B. crew, usable fuel, oil, and fixed equipment.
C. crew, passengers, usable fuel, oil, cargo, and fixed equipment.

C.8.1.5.6.a.1 C01
Before weighing an aircraft, it is necessary to become familiar with the aircraft's CG range in the weight and balance information contained in
A. the applicable Aircraft Specification or Type Certificate Data Sheet.
B. AC 43.13-2A, chapter 11.
C. Airworthiness Alerts pertaining to that aircraft.

C.8.1.5.7.a.1 C01
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.

C.8.1.5.8.a.1 C01
(1) Private aircraft are required by regulations to be weighed periodically.
(2) Private aircraft are required to be weighed after making any alteration.

Regarding the above statements,
A. neither No. 1 nor No. 2 is true.
B. only No. 1 is true.
C. only No. 2 is true.

C.8.1.5.9.a.1 C01

What document will reference the required equipment needed to maintain validity of a standard Airworthiness Certificate?
A. Manufacturer's maintenance manual.
B. AC 43.13-1A.
C. Aircraft Specification or Type Certificate Data Sheet.

C.8.1.6.0.a.1 C01
To obtain useful weight data for purposes of determining the CG, it is necessary that an aircraft be weighed
A. in a level flight attitude.
B. with all items of useful load installed.
C. with at least minimum fuel (1/12-gallon per METO horsepower) in the fuel tanks.

C.8.1.6.1.a.1 C01
What unit of measurement is used to designate arm in weight and balance computation?
A. Inches.
B. Feet.
C. Pound/inches.

C.8.1.6.2.a.1 C01
What determines whether the value of the moment is preceded by a plus (+) or a minus (-) sign in aircraft weight and balance?
A. The location of the weight in reference to the datum.
B. The result of a weight being added or removed and its location relative to the datum.
C. The location of the datum in reference to the aircraft CG.

C.8.1.6.3.a.1 C01
The maximum weight of an aircraft is the
A. empty weight plus crew, maximum fuel, cargo, and baggage.
B. empty weight plus crew, passengers, and fixed equipment.
C. empty weight plus useful load.

C.8.1.6.4.a.1 C01
When computing weight and balance for a helicopter, you must consider that
A. it is different from a fixed wing aircraft, because the whirling rotor makes it difficult to locate the mean aerodynamic chord.
B. the arm of tail mounted components is subject to constant change.
C. it is computed the same as a fixed wing aircraft.

C.8.1.6.5.a.1 C01
What should be clearly indicated on the aircraft weighing form?
A. Minimum allowable gross weight.
B. Weight of unusable fuel.
C. Weighing points.

C.8.1.6.6.a.1 C01

If the reference datum line is placed at the nose of an airplane rather than at the firewall,
A. all measurement arms will be in negative numbers.
B. all measurement arms will be in positive numbers.
C. weight and balance computations will be somewhat more complex.

C.8.1.6.7.a.1 C01
Zero fuel weight is the
A. dry weight plus the weight of full crew, passengers, and cargo.
B. basic operating weight without crew, fuel, and cargo.
C. maximum permissible weight of a loaded aircraft (passengers, crew, and cargo) without fuel.

C.8.1.6.8.a.1 C01
The empty weight of an airplane is determined by
A. adding the net weight of each weighing point and multiplying the measured distance to the datum.
B. subtracting the tare weight from the scale reading and adding the weight of each weighing point.
C. multiplying the measured distance from each weighing point to the datum times the sum of scale reading less the tare weight.

C.8.1.6.9.a.1 C01
When dealing with weight and balance of an aircraft, the term ``maximum weight'' is interpreted to mean the maximum
A. weight of the empty aircraft.
B. weight of the useful load.
C. authorized weight of the aircraft and its contents.

C.8.1.7.0.a.1 C02
The useful load of an aircraft is the
A. difference between the maximum gross weight and empty weight.
B. difference between the net weight and total weight.
C. sum of the empty weight and the maximum gross weight.

C.8.1.7.1.a.1 C02
When determining the empty weight of an aircraft, certificated under current airworthiness standards (FAR Part 23), the oil contained in the supply tank is considered
A. a part of the empty weight.
B. a part of the useful load.
C. the same as the fluid contained in the water injection reservoir.

C.8.1.7.2.a.1 C02
Improper loading of a helicopter which results in exceeding either the fore or aft CG limits is hazardous due to the
A. reduction or loss of effective cyclic pitch control.
B. Coriolis effect being translated to the fuselage.
C. reduction or loss of effective collective pitch control.

C.8.1.7.3.a.1 C02
The maximum weight as used in weight and balance control of a given aircraft can normally be found

A. by weighing the aircraft to obtain empty weight and mathematically adding the weight of fuel, oil, pilot, passengers, and baggage.
B. in the Aircraft Specification or Type Certificate Data Sheet.
C. by adding the empty weight and payload.

C.8.1.7.4.a.1 C02
An aircraft with an empty weight of 2,100 pounds and an empty weight CG +32.5 was altered as follows:
1. two 18-pound passenger seats located at +73 were removed;
2. structural modifications were made at +77 increasing weight by 17 pounds;
3. a seat and safety belt weighing 25 pounds were installed at +74; and
4. radio equipment weighing 35 pounds was installed at +95.

What is the new empty weight CG?
A. +34.01.
B. +33.68.
C. +34.65.

C.8.1.7.5.a.1 C02
The CG range in single rotor helicopters is
A. much greater than for airplanes.
B. approximately the same as the CG range for airplanes.
C. more restricted than for airplanes.

C.8.1.7.6.a.1 C02
The amount of fuel used for computing empty weight and corresponding CG is
A. empty fuel tanks.
B. unusable fuel.
C. the amount of fuel necessary for 1/2 hour of operation.

C.8.1.7.7.a.1 C02
An aircraft as loaded weighs 4,954 pounds at a CG of +30.5 inches. The CG range is +32.0 inches to +42.1 inches. Find the minimum weight of the ballast necessary to bring the CG within the CG range. The ballast arm is +162 inches.
A. 61.98 pounds.
B. 30.58 pounds.
C. 57.16 pounds.

C.8.1.7.8.a.1 C02
As weighed, the total empty weight of an aircraft is 5,862 pounds with a moment of 885,957. However, when the aircraft was weighed, 20 pounds of alcohol were on board at +84, and 23 pounds of hydraulic fluid were in a tank located at +101. What is the empty weight CG of the aircraft?
A. 150.700.
B. 151.700.
C. 151.365.

C.8.1.7.9.a.1 C02

Two boxes which weigh 10 pounds and 5 pounds are placed in an airplane so that their distance aft from the CG are 4 feet and 2 feet respectively. How far forward of the CG should a third box, weighing 20 pounds, be placed so that the CG will not be changed?
A. 3 feet.
B. 2.5 feet.
C. 8 feet.

C.8.1.8.0.a.1 C02
An aircraft with an empty weight of 1,800 pounds and an empty weight CG of +31.5 was altered as follows:
1. two 15-pound passenger seats located at +72 were removed;
2. structural modifications increasing the weight 14 pounds were made at +76;
3. a seat and safety belt weighing 20 pounds were installed at +73.5; and
4. radio equipment weighing 30 pounds was installed at +30.

What is the new empty weight CG?
A. +30.61.
B. +31.61.
C. +32.69.

C.8.1.8.1.a.1 C02
An aircraft had an empty weight of 2,886 pounds with a moment of 101,673.78 before several alterations were made. The alterations included:
1. removing two passenger seats (15 pounds each) at +71;
2. installing a cabinet (97 pounds) at +71;
3. installing a seat and safety belt (20 pounds) at +71; and
4. installing radio equipment (30 pounds) at +94.

The alterations caused the new empty weight CG to move
A. 1.62 inches aft of the original empty weight CG.
B. 2.03 inches forward of the original empty weight CG.
C. 2.03 inches aft of the original empty weight CG.

C.8.1.8.2.a.1 C02
If a 40-pound generator applies +1400-inch pounds to a reference axis, the generator is located
A. –35 from the axis.
B. +35 from the axis.
C. +25 from the axis.

C.8.1.8.3.a.1 C02
In a balance computation of an aircraft from which an item located aft of the datum was removed, use
A. (–)weight X (+)arm (–)moment.
B. (–)weight X (–)arm (+)moment.
C. (+)weight X (–)arm (–)moment.

C.8.1.8.4.a.1 C02

Datum is forward of the main gear center point	30.24 in
Actual distance between tail gear and main gear center points	360.26 in

Net weight at right main gear	9,980 lb
Net weight at left main gear	9,770 lb
Net weight at tail gear	1,970 lb

These items were in the aircraft when weighed:
1. Lavatory water tank full (34 pounds at +352).
2. Hydraulic fluid (22 pounds at 8).
3. Removable ballast (146 pounds at +380).

What is the empty weight CG of the aircraft described above?
A. 62.92 inches.
B. 60.31 inches.
C. 58.54 inches.

C.8.1.8.5.a.1 C02
When making a rearward weight and balance check to determine that the CG will not exceed the rearward limit during extreme conditions, the items of useful load which should be computed at their minimum weights are those located forward of the
A. forward CG limit.
B. datum.
C. rearward CG limit.

C.8.1.8.6.a.1 C02
When an empty aircraft is weighed, the combined net weight at the main gears is 3,540 pounds with an arm of 195.5 inches. At the nose gear, the net weight is 2,322 pounds with an arm of 83.5 inches. The datum line is forward of the nose of the aircraft. What is the empty CG of the aircraft?
A. 151.1.
B. 155.2.
C. 146.5.

C.8.1.8.7.a.1 C02
An aircraft with an empty weight of 1,500 pounds and an empty weight CG of +28.4 was altered as follows:
1. two 12-pound seats located at +68.5 were removed;
2. structural modifications weighing +28 pounds were made at +73;
3. a seat and safety belt weighing 30 pounds were installed at +70.5; and
4. radio equipment weighing 25 pounds was installed at +85.

What is the new empty weight CG?
A. +23.51.
B. +31.35.
C. +30.30.

C.8.1.8.8.a.1 C02
The following alteration was performed on an aircraft: A model B engine weighing 175 pounds was replaced by a model D engine weighing 185 pounds at a 62.00-inch station. The aircraft weight and balance records show the previous empty weight to be 998 pounds and an empty weight CG of 13.48 inches. What is the new empty weight CG?
A. 13.96 inches.

B. 14.25 inches.
C. 12.73 inches.

C.8.1.8.9.a.1 C02
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.

C.8.1.9.0.a.1 C02
When computing the maximum forward loaded CG of an aircraft, minimum weights, arms, and moments should be used for items of useful load that are located aft of the
A. rearward CG limit.
B. forward CG limit.
C. datum.

C.8.1.9.1.a.1 C02
Find the empty weight CG location for the following tricycle gear aircraft. Each main wheel weighs 753 pounds, nosewheel weighs 22 pounds, distance between nosewheel and main wheels is 87.5 inches, nosewheel location is +9.875 inches from datum, with 1 gallon of hydraulic fluid at 21.0 inches included in the weight scale.
A. +97.375 inches.
B. +95.61 inches.
C. +96.11 inches.

D.8.1.9.2.a.1 D01
Which coupling nut should be selected for use with 1/2-inch aluminum oil lines which are to be assembled using flared tube ends and standard AN nuts, sleeves, and fittings?
A. AN-818-2.
B. AN-818-8.
C. AN-818-5.

D.8.1.9.3.a.1 D01
Hydraulic lines located in entryways or passenger, crew, or baggage compartments
A. should be suitably supported and protected against physical damage.
B. are not normally permitted.
C. must be routed in separate enclosures which must be drained and vented to the outside atmosphere.

D.8.1.9.4.a.1 D01
From the following sequences of steps, indicate the proper order you would use to make a single flare on a piece of tubing:
1. Place the tube in the proper size hole in the flaring block.
2. Project the end of the tube slightly from the top of the flaring tool, about the thickness of a dime.
3. Slip the fitting nut and sleeve on the tube.
4. Strike the plunger several light blows with a lightweight hammer or mallet and turn the plunger one half turn after each blow.
5. Tighten the clamp bar securely to prevent slippage.

6. Center the plunger or flaring pin over the tube.

A. 1, 3, 5, 2, 4, 6.
B. 3, 1, 6, 2, 5, 4.
C. 3, 2, 6, 5, 1, 4.

D.8.1.9.5.a.1 D01
Hydraulic tubing, which is damaged in a localized area to such an extent that repair is necessary, may be repaired
A. by cutting out the damaged area and utilizing a swaged tube fitting to join the tube ends.
B. only by replacing the entire tubing using the same size and material as the original.
C. by cutting out the damaged section and soldering in a replacement section of tubing.

D.8.1.9.6.a.1 D01
What is an advantage of a double flare on aluminum tubing?
A. Ease of construction.
B. It is less resistant to the shearing effect of torque.
C. It is more resistant to the shearing effect of torque.

D.8.1.9.7.a.1 D01
A certain amount of slack must be left in a flexible hose during installation because, when under pressure, it
A. expands in length and diameter.
B. expands in length and contracts in diameter.
C. contracts in length and expands in diameter.

D.8.1.9.8.a.1 D01
The term ``cold flow'' is generally associated with
A. vaporizing fuel.
B. rubber hose.
C. welding and sheet metal.

D.8.1.9.9.a.1 D01
What is the color of an AN steel flared tube fitting?
A. Black.
B. Blue.
C. Green.

D.8.2.0.0.a.1 D01
Select the correct statement in reference to flare fittings.
A. AN fittings can easily be identified by the shoulder between the end of the threads and the flare cone.
B. AC and AN fittings are identical except for the material from which they are made and the identifying color.
C. AC fittings have generally replaced the older AN fittings.

D.8.2.0.1.a.1 D01
Flexible lines must be installed

A. only aft of the firewall.
B. with just enough slack to make the connection.
C. with 5 to 8 percent slack.

D.8.2.0.2.a.1 D01
The maximum distance between end fittings to which a straight hose assembly is to be connected is 50 inches. The minimum hose length to make such a connection should be
A. 54-1/2 inches.
B. 51 inches.
C. 52-1/2 inches.

D.8.2.0.3.a.1 D01
Soft aluminum tubing (1100, 3003, or 5052) may be bent by hand if the size is
A. 5/16 inch or less.
B. 7/16 inch or less.
C. 1/4 inch or less.

D.8.2.0.4.a.1 D01
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.

D.8.2.0.5.a.1 D01
In most aircraft hydraulic systems, two piece tube connectors consisting of a sleeve and a nut are used when a tubing flare is required. The use of this type connector eliminates
A. the flaring operation prior to assembly.
B. the possibility of reducing the flare thickness by wiping or ironing during the tightening process.
C. wrench damage to the tubing during the tightening process.

D.8.2.0.6.a.1 D01
Which statement about Military Standard (MS) flareless fittings is correct?
A. During installation, MS flareless fittings are normally tightened by turning the nut a specified amount after the sleeve and fitting sealing surface have made contact, rather than being torqued.
B. MS flareless fittings should not be lubricated prior to assembly.
C. MS flareless fittings must be tightened to a specific torque.

D.8.2.0.7.a.1 D01
When flaring aluminum tubing for use with AN coupling nuts and sleeves, the flare angle should be
A. 37°.
B. 67°.
C. 45°.

D.8.2.0.8.a.1 D01

Scratches or nicks on the straight portion of aluminum alloy tubing may be repaired if they are no deeper than
A. 20 percent of the wall thickness.
B. 1/16 inch.
C. 10 percent of the wall thickness.

D.8.2.0.9.a.1 D01
Flexible hose used in aircraft plumbing is classified in size according to the
A. outside diameter.
B. cross sectional area.
C. inside diameter.

D.8.2.1.0.a.1 D01
A scratch or nick in aluminum alloy tubing can be repaired by burnishing provided the scratch or nick does not
A. appear in the heel of a bend in the tube.
B. exceed 20 percent of the wall thickness of the tube.
C. exceed 10 percent of the tube diameter.

D.8.2.1.1.a.1 D01
A hose material that can be used to carry a wide range of petroleum and synthetic fluids is
A. Butyl.
B. Teflon.
C. Buna N.

D.8.2.1.2.a.1 D01
Which tubings have the characteristics (high strength, abrasion resistance) necessary for use in a high pressure (3,000 PSI) hydraulic system for operation of landing gear and flaps?
A. 2024-T or 5052-0 aluminum alloy.
B. Corrosion resistant steel annealed or 1/4H.
C. 1100-1/2H or 3003-1/2H aluminum alloy.

D.8.2.1.3.a.1 D01
When installing bonded clamps to support metal tubing,
A. paint removal from tube is not recommended as it will inhibit corrosion.
B. paint clamp and tube after clamp installation to prevent corrosion.
C. remove paint or anodizing from tube at clamp location.

D.8.2.1.4.a.1 D01
In a metal tubing installation,
A. rigid straight line runs are preferable.
B. tension is undesirable because pressurization will cause it to expand and shift.
C. a tube may be pulled in line if the nut will start on the threaded coupling.

D.8.2.1.5.a.1 D01
A gas or fluid line marked with the letters PHDAN
A. is a high pressure line. The letters mean Pressure High, Discharge at Nacelle.

B. is carrying a substance which may be dangerous to personnel.
C. must be made of a nonphosphorous metal.

D.8.2.1.6.a.1 D01
Which statement concerning Bernoulli's principle is true?
A. The pressure of a fluid increases at points where the velocity of the fluid increases.
B. The pressure of a fluid decreases at points where the velocity of the fluid increases.
C. It applies only to gases.

D.8.2.1.7.a.1 D01
(1) Bonded clamps are used for support when installing metal tubing.
(2) Unbonded clamps are used for support when installing wiring.

Regarding the above statements,
A. only No. 1 is true.
B. both No. 1 and No. 2 are true.
C. neither No. 1 nor No. 2 is true.

D.8.2.1.8.a.1 D01
Flexible hose may be used in aircraft fluid systems
A. to replace any fluid system line not subject to heat.
B. according to the manufacturer's specifications.
C. to replace any fluid system line.

E.8.2.1.9.a.1 E01
Magnetic particle inspection is used primarily to detect
A. distortion.
B. deep subsurface flaws.
C. flaws on or near the surface.

E.8.2.2.0.a.1 E01
In order for dye penetrant inspection to be effective, the material being checked must
A. be magnetic.
B. be nonmagnetic.
C. have surface cracks.

E.8.2.2.1.a.1 E01
Which of these nondestructive testing methods is suitable for the inspection of most metals, plastics, and ceramics for surface and subsurface defects?
A. Eddy current inspection.
B. Magnetic particle inspection.
C. Ultrasonic inspection.

E.8.2.2.2.a.1 E01
What nondestructive testing method requires little or no part preparation, is used to detect surface or near surface defects in most metals, and may also be used to separate metals or alloys and their heat treat conditions?

A. Eddy current inspection.
B. Ultrasonic inspection.
C. Magnetic particle inspection.

E.8.2.2.3.a.1 E01
What method of magnetic particle inspection is used most often to inspect aircraft parts for invisible cracks and other defects?
A. Residual.
B. Inductance.
C. Continuous.

E.8.2.2.4.a.1 E01
How many of these factors are considered essential knowledge for x ray exposure?
1. Processing of the film.
2. Material thickness and density.
3. Exposure distance and angle.
4. Film characteristics.

A. One.
B. Three.
C. Four.

E.8.2.2.5.a.1 E01
The testing medium that is generally used in magnetic particle inspection utilizes a ferromagnetic material that has
A. high permeability and low retentivity.
B. low permeability and high retentivity.
C. high permeability and high retentivity.

E.8.2.2.6.a.1 E01
Which statement relating to the residual magnetizing inspection method is true?
A. Subsurface discontinuities are made readily apparent.
B. It is used in practically all circular and longitudinal magnetizing procedures.
C. It may be used only with steels which have been heat treated for stressed applications.

E.8.2.2.7.a.1 E01
A mechanic has completed a bonded honeycomb repair using the potted compound repair technique. What nondestructive testing method is used to determine the soundness of the repair after the repair has cured?
A. Eddy current test.
B. Metallic ring test.
C. Ultrasonic test.

E.8.2.2.8.a.1 E02
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.

E.8.2.2.9.a.1 E02
Which of these metals is inspected using the magnetic particle inspection method?
A. Magnesium alloys.
B. Aluminum alloys.
C. Iron alloys.

E.8.2.3.0.a.1 E02
One way a part may be demagnetized after magnetic particle inspection is by
A. subjecting the part to high voltage, low amperage ac.
B. slowly moving the part out of an ac magnetic field of sufficient strength.
C. slowly moving the part into an ac magnetic field of sufficient strength.

E.8.2.3.1.a.1 E02
Which type crack can be detected by magnetic particle inspection using either circular or longitudinal magnetization?
A. 45°.
B. Longitudinal.
C. Transverse.

E.8.2.3.2.a.1 E02
Surface cracks in aluminum castings and forgings may usually be detected by
A. the use of dye penetrants and suitable developers.
B. magnetic particle inspection.
C. submerging the part in a solution of hydrochloric acid and rinsing with clear water.

E.8.2.3.3.a.1 E02
To detect a minute crack using dye penetrant inspection usually requires
A. that the developer be applied to a flat surface.
B. a longer than normal penetrating time.
C. the surface to be highly polished.

E.8.2.3.4.a.1 E02
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.

E.8.2.3.5.a.1 E02
What is the primary limitation of the dye penetrant method of inspection?
A. The defect must be open to the surface.
B. The smaller the defect, the longer the penetrating time required.
C. It is limited in use to a small number of applications.

E.8.2.3.6.a.1 E02

If dye penetrant inspection indications are not sharp and clear, the most probable cause is that the part
A. was not correctly degaussed before the developer was applied.
B. is not damaged.
C. was not thoroughly washed before developer was applied.

E.8.2.3.7.a.1 E02
(1) An aircraft part may be demagnetized by subjecting it to a magnetizing force from alternating current that is gradually reduced in strength.
(2) An aircraft part may be demagnetized by subjecting it to a magnetizing force from direct current that is alternately reversed in direction and gradually reduced in strength.

Regarding the above statements,
A. both No. 1 and No. 2 are true.
B. only No. 1 is true.
C. only No. 2 is true.

E.8.2.3.8.a.1 E02
The pattern for an inclusion is a magnetic particle buildup forming
A. a fernlike pattern.
B. a single line.
C. parallel lines.

E.8.2.3.9.a.1 E02
A part which is being prepared for dye penetrant inspection should be cleaned with
A. a volatile petroleum base solvent.
B. the penetrant developer.
C. water base solvents only.

E.8.2.4.0.a.1 E02
Under magnetic particle inspection, a part will be identified as having a fatigue crack under which condition?
A. The discontinuity pattern is straight.
B. The discontinuity is found in a nonstressed area of the part.
C. The discontinuity is found in a highly stressed area of the part.

E.8.2.4.1.a.1 E02
The main disadvantage of dye penetrant inspection is that
A. the chemicals used are dangerous to the inspection personnel.
B. the defect must be open to the surface.
C. it is excessively time consuming.

E.8.2.4.2.a.1 E02
What defects will be detected by magnetizing a part using continuous longitudinal magnetization with a cable?
A. Defects perpendicular to the long axis of the part.
B. Defects parallel to the long axis of the part.
C. Defects parallel to the concentric circles of magnetic force within the part.

E.8.2.4.3.a.1 E02
Circular magnetization of a part can be used to detect which defects?
A. Defects parallel to the long axis of the part.
B. Defects perpendicular to the long axis of the part.
C. Defects perpendicular to the concentric circles of magnetic force within the part.

E.8.2.4.4.a.1 E02
(1) In nondestructive testing, a discontinuity may be defined as an interruption in the normal physical structure or configuration of a part.
(2) A discontinuity may or may not affect the usefulness of a part.

Regarding the above statements,
A. only No. 1 is true.
B. only No. 2 is true.
C. both No. 1 and No. 2 are true.

E.8.2.4.5.a.1 E03
What type of corrosion attacks grain boundaries of aluminum alloys which are improperly or inadequately heat treated?
A. Stress.
B. Intergranular.
C. Fretting.

E.8.2.4.6.a.1 E03
A primary purpose in annealing metals is to
A. relieve stresses.
B. increase strength.
C. improve corrosion resistance.

E.8.2.4.7.a.1 E03
Which heat treating process of metal produces a hard, wear resistant surface over a strong, tough core?
A. Case hardening.
B. Annealing.
C. Tempering.

E.8.2.4.8.a.1 E03
Which heat treating operation would be performed when the surface of the metal is changed chemically by introducing a high carbide or nitride content?
A. Tempering.
B. Normalizing.
C. Case hardening.

E.8.2.4.9.a.1 E03
Normalizing is a process of heat treating
A. aluminum alloys only.
B. iron-base metals only.
C. both aluminum alloys and iron-base metals.

E.8.2.5.0.a.1 E03
Repeatedly applying mechanical force to most metals such as rolling, hammering, bending, or twisting causes a condition commonly known as
A. tempering or drawing.
B. artificial aging.
C. cold working, strain, or work hardening.

E.8.2.5.1.a.1 E03
In order to successfully heat treat ferrous metals, the rate of cooling is controlled by
A. allowing a time lag between soaking and quenching.
B. selecting a suitable quenching media.
C. artificial aging.

E.8.2.5.2.a.1 E03
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.

E.8.2.5.3.a.1 E03
What aluminum alloy designations indicate that the metal has received no hardening or tempering treatment?
A. 3003-F.
B. 5052-H36.
C. 6061-O.

E.8.2.5.4.a.1 E03
Which material cannot be heat treated repeatedly without harmful effects?
A. Unclad aluminum alloy in sheet form.
B. 6061-T9 stainless steel.
C. Clad aluminum alloy.

E.8.2.5.5.a.1 E03
What is descriptive of the annealing process of steel during and after it has been annealed?
A. Rapid cooling; high strength.
B. Slow cooling; low strength.
C. Slow cooling; increased resistance to wear.

E.8.2.5.6.a.1 E04
Unless otherwise specified, torque values for tightening aircraft nuts and bolts relate to
A. dry, thoroughly degreased threads.
B. lightly oiled threads.
C. threads lightly coated with an anti-seize compound.

E.8.2.5.7.a.1 E04

What is generally used in the construction of aircraft engine firewalls?
A. Stainless steel.
B. Chrome molybdenum alloy steel.
C. Magnesium titanium alloy steel.

E.8.2.5.8.a.1 E04
Unless otherwise specified or required, aircraft bolts should be installed so that the bolthead is
A. upward, or in a forward direction.
B. downward, or in a forward direction.
C. downward, or in a rearward direction.

E.8.2.5.9.a.1 E04
Alclad is a metal consisting of
A. aluminum alloy surface layers and a pure aluminum core.
B. pure aluminum surface layers on an aluminum alloy core.
C. a homogeneous mixture of pure aluminum and aluminum alloy.

E.8.2.6.0.a.1 E04
A fiber type, self locking nut must never be used on an aircraft if the bolt is
A. under shear loading.
B. under tension loading.
C. subject to rotation.

E.8.2.6.1.a.1 E04
The Society of Automotive Engineers and the American Iron and Steel Institute use a numerical index system to identify the composition of various steels. The symbol 1020 indicates a plain carbon steel containing an average of
A. 20.00 percent carbon.
B. 2.00 percent carbon by volume.
C. 0.20 percent carbon by weight.

E.8.2.6.2.a.1 E04
(Refer to figure 42.) Which of the bolthead code markings shown identifies a corrosion resistant AN standard steel bolt?
A. 1.
B. 2.
C. 3.

E.8.2.6.3.a.1 E04
Aircraft bolts with a cross or asterisk marked on the bolthead are
A. made of aluminum alloy.
B. close tolerance bolts.
C. standard steel bolts.

E.8.2.6.4.a.1 E04
Which statement regarding aircraft bolts is correct?

A. When tightening castellated nuts on drilled bolts, if the cotter pin holes do not line up, it is permissible to overtighten the nut to permit alignment of the next slot with the cotter pin hole.
B. In general, bolt grip lengths should equal the material thickness.
C. Alloy steel bolts smaller than 1/4-inch diameter should not be used in primary structure.

E.8.2.6.5.a.1 E04
Generally speaking, bolt grip lengths should be
A. one and one half times the thickness of the material through which they extend.
B. equal to the thickness of the material through which they extend plus approximately one diameter.
C. equal to the thickness of the material through which they extend.

E.8.2.6.6.a.1 E04
When the specific torque value for nuts is not given, where can the recommended torque value be found?
A. AC 43.13-2A.
B. Technical Standard Order.
C. AC 43.13-1A.

E.8.2.6.7.a.1 E04
(Refer to figure 43.) Identify the clevis bolt illustrated.
A. 1.
B. 3.
C. 2.

E.8.2.6.8.a.1 E04
A particular component is attached to the aircraft structure by the use of an aircraft bolt and a castellated tension nut combination. If the cotter pin hole does not align within the recommended torque range, the acceptable practice is to
A. exceed the torque range.
B. lubricate the threaded sections of the nut and bolt and retorque.
C. change washers and try again.

E.8.2.6.9.a.1 E04
A bolt with a single raised dash on the head is classified as an
A. AN corrosion resistant steel bolt.
B. NAS standard aircraft bolt.
C. NAS close tolerance bolt.

E.8.2.7.0.a.1 E04
How is a clevis bolt used with a fork end cable terminal secured?
A. With a shear nut tightened to a snug fit, but with no strain imposed on the fork and safetied with a cotter pin.
B. With a castle nut tightened until slight binding occurs between the fork and the fitting to which it is being attached.
C. With a shear nut and cotter pin or a thin self locking nut tightened enough to prevent rotation of the bolt in the fork.

E.8.2.7.1.a.1 E04

Where is an AN clevis bolt used in an airplane?
A. For tension and shear load conditions.
B. Where external tension loads are applied.
C. Only for shear load applications.

E.8.2.7.2.a.1 E04
A bolt with an X inside a triangle on the head is classified as an
A. NAS standard aircraft bolt.
B. NAS close tolerance bolt.
C. AN corrosion resistant steel bolt.

E.8.2.7.3.a.1 E04
The core material of Alclad 2024-T4 is
A. heat treated aluminum alloy, and the surface material is commercially pure aluminum.
B. commercially pure aluminum, and the surface material is heat treated aluminum alloy.
C. strain hardened aluminum alloy, and the surface material is commercially pure aluminum.

E.8.2.7.4.a.1 E04
The aluminum code number 1100 identifies what type of aluminum?
A. Aluminum alloy containing 11 percent copper.
B. Aluminum alloy containing zinc.
C. 99 percent commercially pure aluminum.

E.8.2.7.5.a.1 E04
Aircraft bolts are usually manufactured with a
A. class 1 fit for the threads.
B. class 2 fit for the threads.
C. class 3 fit for the threads.

E.8.2.7.6.a.1 E04
In the four digit aluminum index system number 2024, the first digit indicates
A. the percent of alloy added.
B. the different alloys in that group.
C. copper is the major alloying element.

E.8.2.7.7.a.1 E04
How is the locking feature of the fiber type locknut obtained?
A. By the use of an unthreaded fiber locking insert.
B. By a fiber insert held firmly in place at the base of the load carrying section.
C. By making the threads in the fiber insert slightly smaller than those in the load carrying section.

E.8.2.7.8.a.1 E05
(Refer to figure 44.) Identify the weld caused by an excessive amount of acetylene.
A. 4.
B. 1.
C. 3.

E.8.2.7.9.a.1 E05
(Refer to figure 44.) Select the illustration which depicts a cold weld.
A. 3.
B. 2.
C. 4.

E.8.2.8.0.a.1 E05
Why is it considered good practice to normalize a part after welding?
A. To relieve internal stresses developed within the base metal.
B. To introduce a slight amount of carbon to improve the surface hardness of the weld.
C. To remove the surface scale formed during welding.

E.8.2.8.1.a.1 E05
Holes and a few projecting globules are found in a weld. What action should be taken?
A. Reweld over the first bead to fill gaps and obtain uniform strength.
B. Remove all the old weld and reweld the joint.
C. Grind the rough surface smooth and reweld the joint.

E.8.2.8.2.a.1 E05
Which condition indicates a part has cooled too quickly after being welded?
A. Cracking adjacent to the weld.
B. Discoloration of the base metal.
C. Gas pockets, porosity, and slag inclusions.

E.8.2.8.3.a.1 E05
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.

E.8.2.8.4.a.1 E05
One characteristic of a good weld is that no oxide should be formed on the base metal at a distance from the weld of more than
A. 1/2 inch.
B. 1 inch.
C. 1/4 inch.

E.8.2.8.5.a.1 E05
(Refer to figure 45.) What type weld is shown at A?
A. Fillet.
B. Butt.
C. Lap.

E.8.2.8.6.a.1 E05
(Refer to figure 45.) What type weld is shown at B?
A. Butt.

B. Double butt.
C. Fillet.

E.8.2.8.7.a.1 E05
(Refer to figure 45.) What type weld is shown at G?
A. Lap.
B. Butt.
C. Flat.

E.8.2.8.8.a.1 E05
On a fillet weld, the penetration requirement includes what percentage(s) of the base metal thickness?
A. 100 percent.
B. 25 to 50 percent.
C. 60 to 80 percent.

E.8.2.8.9.a.1 E06
Which tool can be used to measure the alignment of a rotor shaft or the plane of rotation of a disk?
A. Dial indicator.
B. Shaft gauge.
C. Protractor.

E.8.2.9.0.a.1 E06
(Refer to figure 46.) The measurement reading on the illustrated micrometer is
A. 0.2851.
B. 0.2911.
C. 0.2901.

E.8.2.9.1.a.1 E06
Identify the correct statement.
A. An outside micrometer is limited to measuring diameters.
B. Tools used on certificated aircraft must be an approved type.
C. Dividers do not provide a reading when used as a measuring device.

E.8.2.9.2.a.1 E06
(Refer to figure 47.) What is the measurement reading on the vernier caliper scale?
A. 1.411 inches.
B. 1.436 inches.
C. 1.700 inches.

E.8.2.9.3.a.1 E06
Which tool is used to measure the clearance between a surface plate and a relatively narrow surface being checked for flatness?
A. Depth gauge.
B. Thickness gauge.
C. Dial indicator.

E.8.2.9.4.a.1 E06
Which number represents the vernier scale graduation of a micrometer?
A. .00001.
B. .001.
C. .0001.

E.8.2.9.5.a.1 E06
Which tool is used to find the center of a shaft or other cylindrical work?
A. Combination set.
B. Dial indicator.
C. Micrometer caliper.

E.8.2.9.6.a.1 E06
(Refer to figure 48.) What does the micrometer read?
A. .2974.
B. .3004.
C. .3108.

E.8.2.9.7.a.1 E06
If it is necessary to accurately measure the diameter of a hole approximately 1/4 inch in diameter, the mechanic should use a
A. telescoping gauge and determine the size of the hole by taking a micrometer reading of the adjustable end of the telescoping gauge.
B. 0 to 1 inch inside micrometer and read the measurement directly from the micrometer.
C. small hole gauge and determine the size of the hole by taking a micrometer reading of the ball end of the gauge.

E.8.2.9.8.a.1 E06
(Refer to figure 49.) The measurement reading on the micrometer is
A. .2758.
B. .2702.
C. .2792.

E.8.2.9.9.a.1 E06
What tool is generally used to set a divider to an exact dimension?
A. Machinist scale.
B. Surface gauge.
C. Dial indicator.

E.8.3.0.0.a.1 E06
What tool is generally used to calibrate a micrometer or check its accuracy?
A. Gauge block.
B. Dial indicator.
C. Machinist scale.

E.8.3.0.1.a.1 E06

What precision measuring tool is used for measuring crankpin and main bearing journals for out of round wear?
A. Dial gauge.
B. Micrometer caliper.
C. Depth gauge.

E.8.3.0.2.a.1 E06
The side clearances of piston rings are measured with a
A. depth gauge.
B. thickness gauge.
C. dial gauge.

E.8.3.0.3.a.1 E06
How can the dimensional inspection of a bearing in a rocker arm be accomplished?
A. Depth gauge and micrometer.
B. Thickness gauge and push fit arbor.
C. Telescopic gauge and micrometer.

E.8.3.0.4.a.1 E06
The twist of a connecting rod is checked by installing push fit arbors in both ends, supported by parallel steel bars on a surface plate. Measurements are taken between the arbor and the parallel bar with a
A. dial gauge.
B. height gauge.
C. thickness gauge.

E.8.3.0.5.a.1 E06
The clearance between the piston rings and the ring lands is measured with a
A. micrometer caliper.
B. thickness gauge.
C. depth gauge.

E.8.3.0.6.a.1 E06
What may be used to check the stem on a poppet-type valve for stretch?
A. Dial indicator.
B. Micrometer.
C. Telescoping gauge.

E.8.3.0.7.a.1 E06
Which tool can be used to determine piston pin out of round wear?
A. Telescopic gauge.
B. Micrometer caliper.
C. Dial indicator.

F.8.3.0.8.a.1 F01
During starting of a turbine powerplant using a compressed air starter, a hung start occurred. Select the proper procedure.
A. Increase air power to the starter.

B. Re engage the starter.
C. Shut the engine down.

F.8.3.0.9.a.1 F01
A hung start in a jet engine is often caused by
A. malfunctions in the ignition system.
B. the starter cutting off too soon.
C. an excessively rich fuel/air mixture.

F.8.3.1.0.a.1 F01
When towing an aircraft,
A. discharge all hydraulic pressure to prevent accidental operation of the landing gear retracting mechanism.
B. all tailwheel aircraft must be towed backwards.
C. if the aircraft has a steerable nosewheel, the locking scissors should be set to full swivel.

F.8.3.1.1.a.1 F01
Which statement(s) is/are true regarding tiedown of small aircraft?
1. Manila (hemp) rope has a tendency to stretch when it gets wet.
2. Nylon or dacron rope is preferred to manila rope.
3. The aircraft should be headed downwind in order to eliminate or minimize wing lift.
4. Leave the nosewheel or tailwheel unlocked.

A. 1, 2, 3, and 4.
B. 1 and 2.
C. 2.

F.8.3.1.2.a.1 F01
When approaching the front of an idling jet engine, the hazard area extends forward of the engine approximately
A. 35 feet.
B. 15 feet.
C. 25 feet.

F.8.3.1.3.a.1 F01
The most satisfactory extinguishing agent for use in case of carburetor or intake fire is
A. dry chemical.
B. carbon tetrachloride.
C. carbon dioxide.

F.8.3.1.4.a.1 F01
(Refer to figure 50.) Identify the signal to engage rotor on a rotorcraft.
A. 1.
B. 3.
C. 2.

F.8.3.1.5.a.1 F01

If a radial engine has been shut down for more than 30 minutes, the propeller should be rotated through several revolutions to
A. check for hydraulic lock.
B. prime the fuel pump.
C. prime the engine.

F.8.3.1.6.a.1 F01
The priming of a fuel injected horizontally opposed engine is accomplished by placing the fuel control lever in the
A. IDLE CUTOFF position.
B. AUTO RICH position.
C. FULL RICH position.

F.8.3.1.7.a.1 F01
The most important condition to be monitored during start after fuel flow begins in a turbine engine is the
A. EGT, TIT, or ITT.
B. RPM.
C. oil pressure.

F.8.3.1.8.a.1 F01
How is a flooded engine, equipped with a float type carburetor, cleared of excessive fuel?
A. Crank the engine with the starter or by hand, with the mixture control in cutoff, ignition switch off, and the throttle fully open, until the fuel charge has been cleared.
B. Turn off the fuel and the ignition. Discontinue the starting attempt until the excess fuel has cleared.
C. Crank the engine with the starter or by hand, with the mixture control in cutoff, ignition switch on, and the throttle fully open, until the excess fuel has cleared or until the engine starts.

F.8.3.1.9.a.1 F01
(Refer to figure 51.) Which marshalling signal should be given if a taxiing aircraft is in danger of striking an object?
A. 1
B. 2.
C. 3.

F.8.3.2.0.a.1 F01
Generally, when an induction fire occurs during starting of a reciprocating engine, the first course of action should be to
A. direct carbon dioxide into the air intake of the engine.
B. continue cranking and start the engine if possible.
C. close the throttle.

F.8.3.2.1.a.1 F01
When starting an engine equipped with a float type carburetor with an idle cutoff unit, the mechanic should place the mixture control in the
A. FULL LEAN position.
B. FULL RICH position while priming the engine; however, the mixture control should be returned to the IDLE CUTOFF position when actually starting the engine.
C. FULL RICH position.

F.8.3.2.2.a.1 F01
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.

F.8.3.2.3.a.1 F01
During starting of a turbojet powerplant using a compressed air starter, a hot start occurrence was recorded. Select what happened from the following.
A. The pneumatic starting unit overheated.
B. The powerplant was preheated before starting.
C. The fuel/air mixture was excessively rich.

F.8.3.2.4.a.1 F01
What effect will aviation gasoline mixed with jet fuel have on turbine powerplant efficiency?
A. No appreciable effect.
B. The tetraethyl lead in the gasoline forms deposits on the turbine blades.
C. The tetraethyl lead in the gasoline forms deposits on the compressor blades.

F.8.3.2.5.a.1 F01
(1) Jet fuel is of higher viscosity than aviation gasoline and therefore holds contaminants better.
(2) Viscosity has no relation to contamination of fuel.

Regarding the above statements,
A. only No. 1 is true.
B. both No. 1 and No. 2 are true.
C. neither No. 1 nor No. 2 is true.

F.8.3.2.6.a.1 F01
During towing operations,
A. a person should be in the cockpit to watch for obstructions.
B. persons should be stationed at the nose, each wingtip, and the empennage at all times.
C. a qualified person should be in the cockpit to operate brakes.

F.8.3.2.7.a.1 F01
The tendency of tailwheel-type airplanes to weathervane is greatest while taxiing with a
A. crosswind.
B. headwind.
C. tailwind.

F.8.3.2.8.a.1 F01
A tailwheel-type airplane has a greater tendency to weathervane during taxi than a nosewheel-type because on a tailwheel airplane, the
A. vertical stabilizer to fuselage proportion is greater.
B. surface area ratio behind the pivot point (main gear) is greater.

C. surface area ratio behind the pivot point (main gear) is less.

F.8.3.2.9.a.1 F01
When taxiing (or towing) an aircraft, a flashing red light from the control tower means
A. stop and wait for a green light.
B. move clear of the runway/taxiway immediately.
C. return to starting point.

F.8.3.3.0.a.1 F01
A person should approach or leave a helicopter in the pilot's field of vision whenever the engine is running in order to avoid
A. the tail rotor.
B. the main rotor.
C. blowing dust or debris caused by rotor downwash.

F.8.3.3.1.a.1 F01
When taxiing (or towing) 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.

F.8.3.3.2.a.1 F01
When taxiing (or towing) an aircraft, an alternating red and green 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.

F.8.3.3.3.a.1 F01
When parking a nosewheel-type airplane after taxiing (or towing), the nosewheel should be left
A. unlocked.
B. turned at an angle.
C. pointed straight ahead.

F.8.3.3.4.a.1 F01
When first starting to move an aircraft while taxiing, it is important to
A. test the brakes.
B. test the steering.
C. notify the control tower.

F.8.3.3.5.a.1 F02
The color of 100LL fuel is
A. blue.
B. green.
C. red.

F.8.3.3.6.a.1 F02

How are aviation fuels, which possess greater antiknock qualities than 100 octane, classified?
A. According to the milliliters of lead.
B. By reference to normal heptane.
C. By performance numbers.

F.8.3.3.7.a.1 F02
Why is ethylene dibromide added to aviation gasoline?
A. To remove zinc silicate deposits from the spark plugs.
B. To scavenge lead oxide from the cylinder combustion chambers.
C. To increase the antiknock rating of the fuel.

F.8.3.3.8.a.1 F02
Both gasoline and kerosene have certain advantages for use as turbine fuel. Which statement is true in reference to the advantages of each?
A. Kerosene has a higher heat energy per unit weight than gasoline.
B. Gasoline has a higher heat energy per unit volume than kerosene.
C. Kerosene has a higher heat energy per unit volume than gasoline.

F.8.3.3.9.a.1 F02
What must accompany fuel vaporization?
A. An absorption of heat.
B. A decrease in vapor pressure.
C. A reduction in volume.

F.8.3.4.0.a.1 F02
Characteristics of detonation are
A. cylinder pressure remains the same, excessive cylinder head temperature, and a decrease in engine power.
B. rapid rise in cylinder pressure, excessive cylinder head temperature, and a decrease in engine power.
C. rapid rise in cylinder pressure, cylinder head temperature normal, and a decrease in engine power.

F.8.3.4.1.a.1 F02
A fuel that vaporizes too readily may cause
A. hard starting.
B. detonation.
C. vapor lock.

F.8.3.4.2.a.1 F02
Jet fuel number identifiers are
A. performance numbers to designate the volatility of the fuel.
B. performance numbers and are relative to the fuel's performance in the aircraft engine.
C. type numbers and have no relation to the fuel's performance in the aircraft engine.

F.8.3.4.3.a.1 F02
The main differences between grades 100 and 100LL fuel are
A. volatility and lead content.
B. volatility, lead content, and color.

C. lead content and color.

F.8.3.4.4.a.1 F02
Characteristics of aviation gasoline are
A. high heat value, high volatility.
B. high heat value, low volatility.
C. low heat value, low volatility.

F.8.3.4.5.a.1 F02
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.

F.8.3.4.6.a.1 F02
A fuel that does not vaporize readily enough can cause
A. vapor lock.
B. detonation.
C. hard starting.

G.8.3.4.7.a.1 G01
What material is used to clean magnesium engine parts prior to painting?
A. Dichromate solution.
B. Acetone.
C. MEK (methyl ethyl ketone).

G.8.3.4.8.a.1 G01
How may magnesium engine parts be cleaned?
A. Soak in a 20 percent caustic soda solution.
B. Spray with MEK (methyl ethyl ketone).
C. Wash with a commercial solvent, decarbonize, and scrape or grit blast.

G.8.3.4.9.a.1 G01
When an anodized surface coating is damaged in service, it can be partially restored by
A. use of a metal polish.
B. chemical surface treatment.
C. a suitable mild cleaner.

G.8.3.5.0.a.1 G01
Select the solvent recommended for wipedown of cleaned surfaces just before painting.
A. Aliphatic naphtha.
B. Dry cleaning solvent.
C. Kerosene.

G.8.3.5.1.a.1 G01

Nickel cadmium battery cases and drain surfaces which have been affected by electrolyte should be neutralized with a solution of
A. boric acid.
B. sodium bicarbonate.
C. potassium hydroxide.

G.8.3.5.2.a.1 G01
What is used for general cleaning of aluminum surfaces by mechanical means?
A. Carborundum paper.
B. Aluminum wool.
C. Crocus cloth.

G.8.3.5.3.a.1 G01
Select the solvent used to clean acrylics and rubber.
A. Aliphatic naphtha.
B. Methyl ethyl ketone.
C. Aromatic naphtha.

G.8.3.5.4.a.1 G01
Fayed surfaces cause concern in chemical cleaning because of the danger of
A. forming passive oxides.
B. entrapping corrosive materials.
C. corrosion by imbedded iron oxide.

G.8.3.5.5.a.1 G01
Caustic cleaning products used on aluminum structures have the effect of producing
A. passive oxidation.
B. improved corrosion resistance.
C. corrosion.

G.8.3.5.6.a.1 G02
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.

G.8.3.5.7.a.1 G02
The rust or corrosion that occurs with most metals is the result of
A. a tendency for them to return to their natural state.
B. blocking the flow of electrons in homogenous metals, or between dissimilar metals.
C. electron flow in or between metals from cathodic to anodic areas.

G.8.3.5.8.a.1 G02
Alodizing is a chemical treatment for aluminum alloy to improve paint bonding qualities and to
A. make the surface slightly alkaline.
B. relieve surface stresses.
C. increase corrosion resistance.

G.8.3.5.9.a.1 G02
Which of the listed conditions is NOT one of the requirements for corrosion to occur?
A. The presence of an electrolyte.
B. Electrical contact between an anodic area and a cathodic area.
C. The presence of a passive oxide film.

G.8.3.6.0.a.1 G02
The lifting or flaking of the metal at the surface due to delamination of grain boundaries caused by the pressure of corrosion residual product buildup is called
A. brinelling.
B. granulation.
C. exfoliation.

G.8.3.6.1.a.1 G02
A nonelectrolytic chemical treatment for aluminum alloys to increase corrosion resistance and paint bonding qualities is called
A. anodizing.
B. alodizing.
C. dichromating.

G.8.3.6.2.a.1 G02
Parts are rinsed thoroughly in hot water after they have been heat treated in a sodium and potassium nitrate bath to
A. prevent corrosion.
B. prevent surface cracking.
C. retard discoloration.

G.8.3.6.3.a.1 G02
Intergranular corrosion in structural aluminum alloy parts
A. may be detected by the white, powdery deposit formed on the surface of the metal.
B. is not likely to occur in parts fabricated from aluminum coated alloys (Alclad or Pureclad).
C. cannot always be detected by surface indications.

G.8.3.6.4.a.1 G02
What may be used to remove corrosion from highly stressed steel surfaces?
A. Steel wire brushes.
B. Fine grit aluminum oxide.
C. Medium grit carborundum paper.

G.8.3.6.5.a.1 G02
A primary cause of intergranular corrosion is
A. improper heat treatment.
B. dissimilar metal contact.
C. improper application of primer.

G.8.3.6.6.a.1 G02
Corrosion should be removed from magnesium parts with a
A. silicon carbide brush.
B. carborundum abrasive.
C. stiff, hog bristle brush.

G.8.3.6.7.a.1 G02
Why is it important not to rotate the propeller shaft after the final spraying of corrosion preventive mixture into cylinders on engines prepared for storage?
A. The link rods may be damaged by hydraulic lock.
B. The engine may fire and cause injury to personnel.
C. The seal of corrosion preventive mixture will be broken.

G.8.3.6.8.a.1 G02
Why is a plastic surface flushed with fresh water before it is cleaned with soap and water?
A. To prevent crazing.
B. To prevent scratching.
C. To prevent softening the plastic.

G.8.3.6.9.a.1 G02
What should be done to prevent rapid deterioration when a tire becomes covered with lubricating oil?
A. Wipe the tire with a dry cloth, and then rinse with clean water.
B. Wipe the tire with a dry cloth followed by a washdown with soap and water.
C. Wash the tire with isopropyl alcohol and wipe clean with a dry cloth.

G.8.3.7.0.a.1 G02
Galvanic action caused by dissimilar metal contact may best be prevented by
A. placing a nonporous dielectric material between the surfaces.
B. cleaning both surfaces with a non-residual solvent.
C. application of paper tape between the surfaces.

G.8.3.7.1.a.1 G02
Corrosion caused by galvanic action is the result of
A. excessive anodization.
B. contact between two unlike metals.
C. excessive etching.

G.8.3.7.2.a.1 G02
Which of these materials is the most anodic?
A. Cadmium.
B. 7075-T6 aluminum alloy.
C. Magnesium.

G.8.3.7.3.a.1 G02
The interior surface of sealed structural steel tubing is best protected against corrosion by
A. a coating of hot linseed oil.
B. evacuating the tubing before sealing.

C. a coating of zinc chromate primer.

G.8.3.7.4.a.1 G02
Which of these materials is the most cathodic?
A. Zinc.
B. 2024 aluminum alloy.
C. Stainless steel.

G.8.3.7.5.a.1 G02
Galvanic corrosion is likely to be most rapid and severe when
A. the surface area of the cathodic metal is smaller than surface area of the anodic metal.
B. the surface areas of the anodic and cathodic metals are approximately the same.
C. the surface area of the anodic metal is smaller than the surface area of the cathodic metal.

G.8.3.7.6.a.1 G02
One way of obtaining increased resistance to stress corrosion cracking is by
A. relieving compressive stresses on the metal surface.
B. creating compressive stresses on the metal surface.
C. producing nonuniform deformation while cold working during the manufacturing process.

G.8.3.7.7.a.1 G02
(1) In the corrosion process, it is the cathodic area or dissimilar cathodic material that corrodes.
(2) In the Galvanic or Electro-Chemical Series for metals, the most anodic metals are those that will give up electrons most easily.

Regarding the above statements,
A. only No. 1 is true.
B. only No. 2 is true.
C. both No. 1 and No. 2 are true.

G.8.3.7.8.a.1 G02
Spilled mercury on aluminum
A. increases susceptibility to hydrogen embrittlement.
B. may cause impaired corrosion resistance if left in prolonged contact.
C. causes rapid and severe corrosion that is very difficult to control.

H.8.3.7.9.a.1 H01
What power of 10 is equal to 1,000,000?
A. 10 to the fourth power.
B. 10 to the fifth power.
C. 10 to the sixth power.

H.8.3.8.0.a.1 H01
Find the square root of 1,746.
A. 41.7852.
B. 41.7752.
C. 40.7742.

H.8.3.8.1.a.1 H01
(Refer to figure 52.) Solve the equation.
A. 115.
B. 4.472.
C. 5.

H.8.3.8.2.a.1 H01
Find the square root of 3,722.1835.
A. 61.00971.
B. 61.00.
C. 61.0097.

H.8.3.8.3.b.1 H01
8,019.0514 x 1/81 is equal to the square root of
A. 9,108.
B. 9,081.
C. 9,801.

H.8.3.8.4.a.1 H01
Find the cube of 64.
A. 4.
B. 192.
C. 262,144.

H.8.3.8.5.a.1 H01
Find the value of 10 raised to the negative sixth power.
A. 0.000001.
B. 0.000010.
C. 0.0001.

H.8.3.8.6.a.1 H01
What is the square root of 4 raised to the fifth power?
A. 32.
B. 64.
C. 20.

H.8.3.8.7.a.1 H01
The number 3.47 x 10 to the negative fourth power is equal to
A. .00347.
B. 34,700.0.
C. .000347.

H.8.3.8.8.a.1 H01
Which alternative answer is equal to 16,300?
A. 1.63 x 10 to the fourth power.

B. 1.63 x 10 to the negative third power.
C. 163 x 10 to the negative second power.

H.8.3.8.9.a.1 H01
Find the square root of 124.9924.
A. 111.8 x 10 to the third power.
B. .1118 x 10 to the negative second power.
C. 1,118 x 10 to the negative second power.

H.8.3.9.0.a.1 H01
What is the square root of 16 raised to the fourth power?
A. 1,024.
B. 4,096.
C. 256.

H.8.3.9.1.a.1 H01
(Refer to figure 53.) Solve the equation.
A. .0297.
B. .1680.
C. .0419.

H.8.3.9.2.a.1 H01
The result of 7 raised to the third power plus the square root of 39 is equal to
A. 349.24.
B. .34924.
C. 343.24.

H.8.3.9.3.a.1 H01
Find the square root of 1,824.
A. 42.708 x 10 to the negative second power.
B. .42708.
C. .42708 x 10 to the second power.

H.8.3.9.4.a.1 H02
The total piston displacement of a specific engine is
A. dependent on the compression ratio.
B. the volume displaced by all the pistons during one revolution of the crankshaft.
C. the total volume of all the cylinders.

H.8.3.9.5.a.1 H02
(Refer to figure 54.) Compute the area of the trapezoid.
A. 52.5 square feet.
B. 60 square feet.
C. 76.5 square feet.

H.8.3.9.6.a.1 H02

What size sheet of metal is required to fabricate a cylinder 20 inches long and 8 inches in diameter?

(Note: $C = \pi \times D$)
A. 20" x 25-5/32".
B. 20" x 24-9/64".
C. 20" x 25-9/64".

H.8.3.9.7.a.1 H02
(Refer to figure 55.) Find the area of the right triangle shown.
A. 5 square inches.
B. 6 square inches.
C. 9 square inches.

H.8.3.9.8.a.1 H02
What force is exerted on the piston in a hydraulic cylinder if the area of the piston is 1.2 square inches and the fluid pressure is 850 PSI?
A. 1,020 pounds.
B. 960 pounds.
C. 850 pounds.

H.8.3.9.9.a.1 H02
A rectangular shaped fuel tank measures 60 inches in length, 30 inches in width, and 12 inches in depth. How many cubic feet are within the tank?
A. 12.5.
B. 15.0.
C. 21.0.

H.8.4.0.0.a.1 H02
Select the container size that will be equal in volume to 60 gallons of fuel.

(7.5 gal = 1 cu ft)
A. 7.5 cubic feet.
B. 8.0 cubic feet.
C. 8.5 cubic feet.

H.8.4.0.1.a.1 H02
(Refer to figure 56.) Compute the area of the trapezoid.
A. 24 square feet.
B. 48 square feet.
C. 10 square feet.

H.8.4.0.2.a.1 H02
(Refer to figure 57.) Determine the area of the triangle formed by points A, B, and C.

A to B = 7.5 inches
A to D = 16.8 inches
A. 42 square inches.

B. 63 square inches.
C. 126 square inches.

H.8.4.0.3.a.1 H02
What is the piston displacement of a master cylinder with a 1.5 inch diameter bore and a piston stroke of 4 inches?
A. 9.4247 cubic inches.
B. 7.0686 cubic inches.
C. 6.1541 cubic inches.

H.8.4.0.4.a.1 H02
How many gallons of fuel will be contained in a rectangular shaped tank which measures 2 feet in width, 3 feet in length, and 1 foot 8 inches in depth?

(7.5 gal = 1 cu ft)
A. 66.6.
B. 75.
C. 45.

H.8.4.0.5.a.1 H02
A rectangular shaped fuel tank measures 27-1/2 inches in length, ¾ foot in width, and 8-1/4 inches in depth. How many gallons will the tank contain?

(231 cu in = 1 gal)
A. 7.86.
B. 8.80.
C. 9.80.

H.8.4.0.6.a.1 H02
A four cylinder aircraft engine has a cylinder bore of 3.78 inches and is 8.5 inches deep. With the piston on bottom center, the top of the piston measures 4.0 inches from the bottom of the cylinder. What is the approximate piston displacement of this engine?
A. 200 cubic inches.
B. 360 cubic inches.
C. 235 cubic inches.

H.8.4.0.7.a.1 H02
A rectangular shaped fuel tank measures 37-1/2 inches in length, 14 inches in width, and 8-1/4 inches in depth. How many cubic inches are within the tank?
A. 525.
B. 433.125.
C. 4,331.25.

H.8.4.0.8.a.1 H02
A six cylinder engine with a bore of 3.5 inches, a cylinder height of 7 inches and a stroke of 4.5 inches will have a total piston displacement of
A. 256.88 cubic inches.
B. 259.77 cubic inches.

C. 43.3 cubic inches.

H.8.4.0.9.a.1 H03
Select the fraction which is equal to .020.
A. 3/15.
B. 1/5.
C. 1/50.

H.8.4.1.0.a.1 H03
1.21875 is equal to
A. 83/64.
B. 19/16.
C. 39/32.

H.8.4.1.1.a.1 H03
If the volume of a cylinder with the piston at bottom center is 84 cubic inches and the piston displacement is 70 cubic inches, then the compression ratio is
A. 7 to 1.
B. 1.2 to 1.
C. 6 to 1.

H.8.4.1.2.a.1 H03
Express 7/8 as a percent.
A. 8.75 percent.
B. .875 percent.
C. 87.5 percent.

H.8.4.1.3.a.1 H03
What is the speed of a spur gear with 42 teeth driven by a pinion gear with 14 teeth turning 420 RPM?
A. 588 RPM.
B. 160 RPM.
C. 140 RPM.

H.8.4.1.4.a.1 H03
An engine develops 108 horsepower at 87 percent power. What horsepower would be developed at 65 percent power?
A. 80.
B. 70.
C. 64.

H.8.4.1.5.a.1 H03
Which alternative is the decimal equivalent of the fraction 43/32?
A. 1.34375.
B. 1.34725.
C. 1.32435.

H.8.4.1.6.a.1 H03
Select the fractional equivalent for a 0.09375 thick sheet of aluminum.
A. 5/64.
B. 3/64.
C. 3/32.

H.8.4.1.7.a.1 H03
Express 5/8 as a percent.
A. .625 percent.
B. 6.25 percent.
C. 62.5 percent.

H.8.4.1.8.a.1 H03
Select the decimal which is most nearly equal to 77/64.
A. 1.8311.
B. 0.8311.
C. 1.2031.

H.8.4.1.9.a.1 H03
An airplane flying a distance of 875 miles used 70 gallons of gasoline. How many gallons will it need to travel 3,000 miles?
A. 250.
B. 240.
C. 144.

H.8.4.2.0.a.1 H03
What is the speed ratio of a gear with 36 teeth meshed to a gear with 20 teeth?
A. 5 to 12.
B. 6.6 to 12.
C. 5 to 9.

H.8.4.2.1.a.1 H03
A pinion gear with 14 teeth is driving a spur gear with 42 teeth at 140 RPM. Determine the speed of the pinion gear.
A. 588 RPM.
B. 420 RPM.
C. 240 RPM.

H.8.4.2.2.a.1 H03
The parts department's profit is 12 percent on a new magneto. How much does the magneto cost if the selling price is $145.60?
A. $128.12.
B. $125.60.
C. $130.

H.8.4.2.3.a.1 H03

An engine of 125 horsepower maximum is running at 65 percent power. What is the horsepower being developed?
A. 70.
B. 81.
C. 52.

H.8.4.2.4.a.1 H03
An engine of 98 horsepower maximum is running at 75 percent power. What is the horsepower being developed?
A. 87.00.
B. 33.30.
C. 73.50.

H.8.4.2.5.a.1 H03
A blueprint shows a hole of 0.17187 to be drilled. Which fraction size drill bit is most nearly equal?
A. 11/64.
B. 9/32.
C. 11/32.

H.8.4.2.6.a.1 H03
Which decimal is most nearly equal to a bend radius of 31/64?
A. 0.6450.
B. 0.48437.
C. 0.3164.

H.8.4.2.7.a.1 H03
Sixty five engines are what percent of 80 engines?
A. 81 percent.
B. 65 percent.
C. 52 percent.

H.8.4.2.8.a.1 H03
The radius of a piece of round stock is 7/32. Select the decimal which is most nearly equal to the diameter.
A. 0.2187.
B. 0.4375.
C. 0.3531.

H.8.4.2.9.a.1 H03
Maximum engine life is 900 hours. Recently, 27 engines were removed with an average life of 635.3 hours. What percent of the maximum engine life has been achieved?
A. 71 percent.
B. 72 percent.
C. 73 percent.

H.8.4.3.0.a.1 H03
What is the ratio of 10 feet to 30 inches?

A. 4:1.
B. 1:3.
C. 3:1.

H.8.4.3.1.a.1 H03
How much current does a 30-volt motor, 1/2 horsepower, 85 percent efficient, draw from the bus? (Note: 1 horsepower = 746 watts)
A. 14.6 amperes.
B. 12.4 amperes.
C. 14.1 amperes.

H.8.4.3.2.a.1 H04
Solve the equation.
$[(4 \times -3) + (-9 \times 2)] \div 2 =$
A. –30.
B. –15.
C. –5.

H.8.4.3.3.a.1 H04
Solve the equation.
$(64 \times 3/8) \div 3/4 =$
A. 16.
B. 24.
C. 32.

H.8.4.3.4.a.1 H04
Solve the equation.
$(32 \times 3/8) \div 1/6 =$
A. 12.
B. 2.
C. 72.

H.8.4.3.5.a.1 H04
What is the ratio of a gasoline fuel load of 200 gallons to one of 1,680 pounds?
A. 5:7.
B. 2:3.
C. 5:42.

H.8.4.3.6.a.1 H04
Solve the equation.
$2/4\ (30 + 34)\ 5 =$
A. 160.
B. 245.
C. 640.

H.8.4.3.7.a.1 H04

(Refer to figure 58.) Solve the equation.
A. 174.85.
B. –81.49.
C. 14.00.

H.8.4.3.8.a.1 H04
(Refer to figure 59.) Solve the equation.
A. +31.25.
B. –5.20.
C. –31.25.

H.8.4.3.9.a.1 H04
Solve the equation.
$4 – 3[–6(2+3) + 4] =$
A. 82.
B. –25.
C. –71.

H.8.4.4.0.a.1 H04
Solve the equation.
$–6[–9(–8+4) – 2(7 + 3)] =$
A. –332.
B. 216.
C. –96.

H.8.4.4.1.a.1 H04
Solve the equation.
$(–3 + 2)(–12 – 4) + (–4 + 6) \times 2$
A. 20.
B. 35.
C. 28.

H.8.4.4.2.a.1 H04
(Refer to figure 60.) Solve the equation.
A. 11.9.
B. 11.7.
C. 11.09.

I.8.4.4.3.a.1 I01
Which provides a place for indicating compliance with Airworthiness Directives or manufacturers' service bulletins?
A. Aircraft overhaul manual.
B. Aircraft maintenance records.
C. Illustrated parts catalog.

I.8.4.4.4.a.1 I01

If work performed on an aircraft has been done satisfactorily, the signature of an authorized person on the maintenance records for maintenance or alterations performed constitutes
A. approval of the aircraft for return to service.
B. approval for return to service only for the work performed.
C. only verification that the maintenance or alterations were performed referencing maintenance data.

I.8.4.4.5.a.1 I01
During an annual inspection, if a defect is found which makes the aircraft unairworthy, the person disapproving must
A. remove the Airworthiness Certificate from the aircraft.
B. submit a Malfunction or Defect Report.
C. provide a written notice of the defect to the owner.

I.8.4.4.6.a.1 I01
What is the means by which the FAA notifies aircraft owners and other interested persons of unsafe conditions and prescribes the condition under which the product may continue to be operated?
A. Airworthiness Directives.
B. Airworthiness Alerts.
C. Malfunction or Defect Reports.

I.8.4.4.7.a.1 I01
Which is an appliance major repair?
A. Overhaul of a hydraulic pressure pump.
B. Repairs to a propeller governor or its control.
C. Troubleshooting and repairing broken circuits in landing light circuits.

I.8.4.4.8.a.1 I01
Where should you find this entry?

``Removed right wing from aircraft and removed skin from outer 6 feet. Repaired buckled spar 49 inches from tip in accordance with figure 8 in the manufacturer's structural repair manual No. 28-1."
A. Aircraft engine maintenance record.
B. Aircraft minor repair and alteration record.
C. FAA Form 337.

I.8.4.4.9.a.1 I01
Which maintenance action is an airframe major repair?
A. Changes to the wing or to fixed or movable control surfaces which affect flutter and vibration characteristics.
B. Rewinding the field coil of an electrical accessory.
C. The repair of portions of skin sheets by making additional seams.

I.8.4.5.0.a.1 I01
Which aircraft record entry is the best description of the replacement of several damaged heli coils in a casting?
A. Eight 1/4 – 20 inch standard heli-coils were replaced. The damaged inserts were extracted, the tapped holes gaged, then new inserts installed, and tangs removed.

B. Eight 1/4 – 20 inch standard heli-coils were installed in place of damaged ones.
C. Eight 1/4 – 20 inch standard heli-coil inserts were repaired by replacing the damaged inserts with a lock type insert, after the tapped holes were checked for corrosion.

I.8.4.5.1.a.1 I01
Which maintenance record entry best describes the action taken for a control cable showing approximately 20 percent wear on several of the individual outer wires at a fairlead?
A. Wear within acceptable limits, repair not necessary.
B. Removed and replaced the control cable and rerigged the system.
C. Cable repositioned, worn area moved away from fairlead.

I.8.4.5.2.a.1 I01
Which maintenance record entry best describes the action taken for a .125-inch deep dent in a straight section of 1/2-inch aluminum alloy tubing?
A. Dent within acceptable limits, repair not necessary.
B. Dented section removed and replaced with identical new tubing flared to 45°
C. Dent removed by drawing the appropriate size bullet through the tube.

I.8.4.5.3.a.1 I01
Which aircraft record entry best describes a repair of a dent in a tubular steel structure dented at a cluster?
A. Removed and replaced the damaged member.
B. Welded a reinforcing plate over the dented area.
C. Filled the damaged area with a molten metal and dressed to the original contour.

I.8.4.5.4.a.1 I02
Who is responsible for making the entry in the maintenance records after an annual, 100-hour, or progressive inspection?
A. The owner or operator of the aircraft.
B. The person approving or disapproving for return to service.
C. The pilot performing the test flight.

I.8.4.5.5.a.1 I02
An aircraft owner was provided a list of discrepancies on an aircraft that was not approved for return to service after an annual inspection. Which statement is correct concerning who may correct the discrepancies?
A. Only a mechanic with an inspection authorization.
B. An appropriately rated mechanic.
C. Any certificated repair station.

I.8.4.5.6.a.1 I02
When approving for return to service after maintenance or alteration, the approving person must enter in the maintenance record of the aircraft
A. the date the maintenance or alteration was begun, a description (or reference to acceptable data) of work performed, the name of the person performing the work (if someone else), signature, and certificate number.
B. a description (or reference to acceptable data) of work performed, date of completion, the name of the person performing the work (if someone else), signature, and certificate number.

C. a description (or reference to acceptable data) of work performed, date of completion, the name of the person performing the work (if someone else), signature, certificate number, and kind of certificate held.

I.8.4.5.7.a.1 I02
What action is required when a minor repair is performed on a certificated aircraft?
A. An FAA Form 337 must be completed.
B. An entry in the aircraft's permanent records is required.
C. The owner of the aircraft must annually report minor repairs to the FAA.

I.8.4.5.8.a.1 I02
After making a certain repair to an aircraft engine that is to be returned to service, an FAA Form 337 is prepared. How many copies are required and what is the disposition of the completed forms?
A. Two; one copy for the aircraft owner and one copy for the FAA.
B. Three; one copy for the aircraft owner and two copies for the FAA.
C. Three; one copy for the aircraft owner, one copy for the FAA, and one copy for the permanent records of the repairing agency or individual.

I.8.4.5.9.a.1 I02
Who is responsible for maintaining the required maintenance records for an airplane?
A. Authorized inspector.
B. Certificated mechanic.
C. Aircraft owner.

I.8.4.6.0.a.1 I02
An aircraft was not approved for return to service after an annual inspection and the owner wanted to fly the aircraft to another maintenance base. Which statement is correct?
A. The owner must obtain a special flight permit.
B. The aircraft must be repaired and approved prior to any flight.
C. The owner must obtain a restricted category type certificate.

I.8.4.6.1.a.1 I02
Each person performing an annual or 100-hour inspection shall use a checklist that contains at least those items in the appendix of
A. FAR Part 43.
B. FAR Part 65.
C. AC 43.13-3.

I.8.4.6.2.a.1 I02
An FAA Form 337 is used to record and document
A. preventive and routine maintenance.
B. major and minor repairs, and major and minor alterations.
C. major repairs and major alterations.

I.8.4.6.3.a.1 I02
After a mechanic holding an airframe and powerplant rating completes a 100-hour inspection, what action is required before the aircraft is returned to service?
A. Make the proper entries in the aircraft's maintenance record.

B. Complete an operational check of all systems.
C. A mechanic with an inspection authorization must approve the inspection.

I.8.4.6.4.a.1 I02
A certificated airframe and powerplant mechanic is authorized to approve an aircraft for return to service after
A. a 100-hour inspection.
B. an annual inspection.
C. a progressive inspection.

J.8.4.6.5.a.1 J01
The force that can be produced by an actuating cylinder whose piston has a cross sectional area of 3 square inches operating in a 1,000 PSI hydraulic system is most nearly
A. 3,000 pounds.
B. 334 pounds.
C. 1,000 pounds.

J.8.4.6.6.a.1 J01
The boiling point of a given liquid varies
A. directly with pressure.
B. inversely with pressure.
C. directly with volume.

J.8.4.6.7.a.1 J01
Which of the following is NOT considered a method of heat transfer?
A. Convection.
B. Conduction.
C. Diffusion.

J.8.4.6.8.a.1 J01
An engine that weighs 350 pounds is removed from an aircraft by means of a mobile hoist. The engine is raised 3 feet above its attachment mount, and the entire assembly is then moved forward 12 feet. A constant force of 70 pounds is required to move the loaded hoist. What is the total work input required to move the hoist?
A. 840 foot pounds.
B. 1,890 foot pounds.
C. 1,050 foot pounds.

J.8.4.6.9.a.1 J01
Which condition is the actual amount of water vapor in a mixture of air and water?
A. Relative humidity.
B. Dewpoint.
C. Absolute humidity.

J.8.4.7.0.a.1 J01
Under which conditions will the rate of flow of a liquid through a metering orifice (or jet) be the greatest (all other factors being equal)?

A. Unmetered pressure– 18 PSI,
metered pressure– 17.5 PSI,
atmospheric pressure– 14.5 PSI.
B. Unmetered pressure– 23 PSI,
metered pressure– 12 PSI,
atmospheric pressure– 14.3 PSI.
C. Unmetered pressure– 17 PSI,
metered pressure– 5 PSI,
atmospheric pressure– 14.7 PSI.

J.8.4.7.1.a.1 J01
(Refer to figure 61.) The amount of force applied to rope A to lift the weight is
A. 12 pounds.
B. 15 pounds.
C. 20 pounds.

J.8.4.7.2.a.1 J01
Which will weigh the least?
A. 98 parts of dry air and 2 parts of water vapor.
B. 35 parts of dry air and 65 parts of water vapor.
C. 50 parts of dry air and 50 parts of water vapor.

J.8.4.7.3.a.1 J01
Which is the ratio of the water vapor actually present in the atmosphere to the amount that would be present if the air were saturated at the prevailing temperature and pressure?
A. Absolute humidity.
B. Relative humidity.
C. Dewpoint.

J.8.4.7.4.a.1 J01
The speed of sound in the atmosphere
A. varies according to the frequency of the sound.
B. changes with a change in temperature.
C. changes with a change in pressure.

J.8.4.7.5.a.1 J01
If the volume of a confined gas is doubled (without the addition of more gas), the pressure will (assume the temperature remains constant)
A. increase in direct proportion to the volume increase.
B. remain the same.
C. be reduced to one half its original value.

J.8.4.7.6.a.1 J01
If the temperature of a confined liquid is held constant and its pressure is tripled, the volume will
A. triple.
B. be reduced to one third its original volume.
C. remain the same.

J.8.4.7.7.a.1 J01
How much work input is required to lower (not drop) a 120-pound weight from the top of a 3-foot table to the floor?
A. 120 pounds of force.
B. 360 foot-pounds.
C. 40 foot-pounds.

J.8.4.7.8.a.1 J01
Which atmospheric conditions will cause the true landing speed of an aircraft to be the greatest?
A. Low temperature with low humidity.
B. High temperature with low humidity.
C. High temperature with high humidity.

J.8.4.7.9.a.1 J01
If the fluid pressure is 800 PSI in a 1/2-inch line supplying an actuating cylinder with a piston area of 10 square inches, the force exerted on the piston will be
A. 4,000 pounds.
B. 8,000 pounds.
C. 800 pounds.

J.8.4.8.0.a.1 J01
How many, if any, factors are necessary to determine power?
1. Force exerted.
2. Distance the force moves.
3. Time required to do the work.

A. One.
B. Two.
C. Three.

J.8.4.8.1.a.1 J01
What force must be applied to roll a 120-pound barrel up an inclined plane 9 feet long to a height of 3 feet (disregard friction)?
L ÷ I = R ÷ E
L = Length of ramp, measured along the slope.
I = Height of ramp.
R = Weight of object to be raised or lowered.
E = Force required to raise or lower object.
A. 40 pounds.
B. 120 pounds.
C. 360 pounds.

J.8.4.8.2.a.1 J01
Which statement concerning heat and/or temperature is true?
A. There is an inverse relationship between temperature and heat.
B. Temperature is a measure of the kinetic energy of the molecules of any substance.

C. Temperature is a measure of the potential energy of the molecules of any substance.

J.8.4.8.3.a.1 J01
What is absolute humidity?
A. The temperature to which humid air must be cooled at constant pressure to become saturated.
B. The actual amount of the water vapor in a mixture of air and water.
C. The ratio of the water vapor actually present in the atmosphere to the amount that would be present if the air were saturated at the prevailing temperature and pressure.

J.8.4.8.4.a.1 J01
The temperature to which humid air must be cooled at constant pressure to become saturated is called
A. dewpoint.
B. absolute humidity.
C. relative humidity.

J.8.4.8.5.a.1 J01
If both the volume and the absolute temperature of a confined gas are doubled, the pressure will
A. not change.
B. be halved.
C. become four times as great.

J.8.4.8.6.b.1 J01
If all, or a significant part of a stall strip is missing on an airplane wing, a likely result will be
A. increased lift in the area of installation on the opposite wing at high angles of attack.
B. asymmetrical aileron control at low angles of attack.
C. asymmetrical aileron control at or near stall angles of attack.

J.8.4.8.7.a.1 J01
An airplane wing is designed to produce lift resulting from relatively
A. positive air pressure below and above the wing's surface.
B. negative air pressure below the wing's surface and positive air pressure above the wing's surface.
C. positive air pressure below the wing's surface and negative air pressure above the wing's surface.

J.8.4.8.8.a.1 J01
The purpose of aircraft wing dihedral is to
A. increase lateral stability.
B. increase longitudinal stability.
C. increase lift coefficient of the wing.

J.8.4.8.9.a.1 J01
Aspect ratio of a wing is defined as the ratio of the
A. wingspan to the wing root.
B. square of the chord to the wingspan.
C. wingspan to the mean chord.

J.8.4.9.0.a.1 J01

A wing with a very high aspect ratio (in comparison with a low aspect ratio wing) will have
A. increased drag at high angles of attack.
B. a low stall speed.
C. poor control qualities at low airspeeds.

J.8.4.9.1.a.1 J01
An increase in the speed at which an airfoil passes through the air increases lift because
A. the increased speed of the airflow creates a greater pressure differential between the upper and lower surfaces.
B. the increased speed of the airflow creates a lesser pressure differential between the upper and lower surfaces.
C. the increased velocity of the relative wind increases the angle of attack.

K.8.4.9.2.a.1 K01
Airworthiness Directives are issued primarily to
A. provide information about malfunction or defect trends.
B. present recommended maintenance procedures.
C. correct an unsafe condition.

K.8.4.9.3.a.1 K01
(1) A Supplemental Type Certificate may be issued to more than one applicant for the same design change, providing each applicant shows compliance with the applicable airworthiness requirement.
(2) An installation of an item manufactured in accordance with the Technical Standard Order system requires no further approval for installation in a particular aircraft.

Regarding the above statements,
A. both No. 1 and No. 2 are true.
B. neither No. 1 nor No. 2 is true.
C. only No. 1 is true.

K.8.4.9.4.a.1 K01
Airworthiness Directives are issued by the
A. National Transportation Safety Board (NTSB).
B. aircraft manufacturers.
C. FAA.

K.8.4.9.5.a.1 K01
An aircraft Type Certificate Data Sheet contains
A. maximum fuel grade to be used.
B. control surface adjustment points.
C. location of the datum.

K.8.4.9.6.b.1 K01
Suitability for use of a specific propeller with a particular engine airplane combination can be determined by reference to what informational source?
A. Propeller Specifications or Propeller Type Certificate Data Sheet.
B. Aircraft Specifications or Aircraft Type Certificate Data Sheet.
C. Alphabetical Index of Current Propeller Type Certificate Data Sheets, Specifications, and Listings.

K.8.4.9.7.a.1 K01
If an airworthy aircraft is sold, what is done with the Airworthiness Certificate?
A. It becomes invalid until the aircraft is reinspected and returned to service.
B. It is declared void and a new certificate is issued upon application by the new owner.
C. It is transferred with the aircraft.

K.8.4.9.8.a.1 K01
The issuance of an Airworthiness Certificate is governed by
A. FAR Part 23.
B. FAR Part 21.
C. FAR Part 39.

K.8.4.9.9.a.1 K01
Specifications pertaining to an aircraft, of which a limited number were manufactured under a type certificate and for which there is no current Aircraft Specification, can be found in the
A. Aircraft Listing.
B. Annual Summary of Deleted and Discontinued Aircraft Specifications.
C. FAA Statistical Handbook of Civil Aircraft Specifications.

K.8.5.0.0.a.1 K01
Where are technical descriptions of certificated propellers found?
A. Applicable Airworthiness Directives.
B. Aircraft Specifications.
C. Propeller Type Certificate Data Sheets.

K.8.5.0.1.a.1 K01
What information is generally contained in Aircraft Specifications or Type Certificate Data Sheets?
A. Empty weight of the aircraft.
B. Useful load of aircraft.
C. Control surface movements.

K.8.5.0.2.a.1 K01
Placards required on an aircraft are specified in
A. AC 43.13-1A.
B. FAR's under which the aircraft was type certificated.
C. Aircraft Specifications or Type Certificate Data Sheets.

K.8.5.0.3.a.1 K01
Technical information about older aircraft models, of which no more than 50 remain in service, can be found in the
A. Aircraft Listing.
B. Annual Summary of Deleted and Discontinued Aircraft Specifications.
C. Alphabetical Index of Antique Aircraft.

K.8.5.0.4.a.1 K01

(1) The FAR's require approval after compliance with the data of a Supplemental Type Certificate.
(2) An installation of an item manufactured in accordance with the Technical Standard Order system requires no further approval for installation in a particular aircraft.

Regarding the above statements,
A. only No. 2 is true.
B. neither No. 1 nor No. 2 is true.
C. only No. 1 is true.

K.8.5.0.5.a.1 K01
Which regulation provides information regarding instrument range markings for an airplane certificated in the normal category?
A. FAR Part 21.
B. FAR Part 25.
C. FAR Part 23.

K.8.5.0.6.a.1 K01
(1) Propellers are NOT included in the Airworthiness Directive system.
(2) A certificated powerplant mechanic may make a minor repair on an aluminum propeller and approve for return to service.

Regarding the above statements,
A. only No. 2 is true.
B. both No. 1 and No. 2 are true.
C. neither No. 1 nor No. 2 is true.

K.8.5.0.7.a.1 K01
An aircraft mechanic is privileged to perform major alterations on U.S. certificated aircraft; however, the work must be done in accordance with FAA approved technical data before the aircraft can be returned to service. Which is NOT approved data?
A. Airworthiness Directives.
B. AC 43.13-2A.
C. Supplemental Type Certificates.

K.8.5.0.8.a.1 K01
What is the maintenance recording responsibility of the person who complies with an Airworthiness Directive?
A. Advise the aircraft owner/operator of the work performed.
B. Make an entry in the maintenance record of that equipment.
C. Advise the FAA district office of the work performed, by submitting an FAA Form 337.

K.8.5.0.9.a.1 K01
(1) Manufacturer's data and FAA publications such as Airworthiness Directives, Type Certificate Data Sheets, and advisory circulars are all approved data.
(2) FAA publications such as Technical Standard Orders, Airworthiness Directives, Type Certificate Data Sheets, and Aircraft Specifications and Supplemental Type Certificates are all approved data.

Regarding the above statements,
A. both No. 1 and No. 2 are true.

B. only No. 1 is true.
C. only No. 2 is true.

K.8.5.1.0.a.1 K01
The Air Transport Association of America (ATA) Specification No. 100
(1) establishes a standard for the presentation of technical data in maintenance manuals.
(2) divides the aircraft into numbered systems and subsystems in order to simplify locating maintenance instructions.

Regarding the above statements,
A. both No. 1 and No. 2 are true.
B. neither No. 1 nor No. 2 is true.
C. only No. 1 is true.

K.8.5.1.1.a.1 K01
General Aviation Airworthiness Alerts
A. provide mandatory procedures to prevent or correct serious aircraft problems.
B. provide information about aircraft problems and suggested corrective actions.
C. provide temporary emergency procedures until Airworthiness Directives can be issued.

K.8.5.1.2.b.1 K01
(Refer to figure 62,62A, & 62B as necessary.) Which doubler(s) require(s) heat treatment before installation?
A. –101.
B. –102.
C. Both.

K.8.5.1.3.a.1 K01
(Refer to figure 62, 62A & 62B, as necessary.) Using only the information given (when bend allowance, set back, etc. have been calculated) which doubler is it possible to construct and install?
A. –101.
B. –102.
C. Both.

K.8.5.1.4.b.1 K01
(Refer to figure 62.) The -100 in the title block (Area 1) is applicable to which doubler part number(s)?
A. –101.
B. –102.
C. Both.

K.8.5.1.5.a.1 K02
(Refer to figure 63.) An aircraft has a total time in service of 468 hours. The Airworthiness Directive given was initially complied with at 454 hours in service. How many additional hours in service may be accumulated before the Airworthiness Directive must again be complied with?
A. 46.
B. 200.
C. 186.

K.8.5.1.6.a.1 K02
The following is a table of airspeed limits as given in an FAA issued aircraft specification:

Normal operating speed	260 knots
Never exceed speed	293 knots
Maximum landing gear operation speed	174 knots
Maximum flap extended speed	139 knots

The high end of the white arc on the airspeed instrument would be at
A. 260 knots.
B. 174 knots.
C. 139 knots.

K.8.5.1.7.a.1 K02
A complete detailed inspection and adjustment of the valve mechanism will be made at the first 25 hours after the engine has been placed in service. Subsequent inspections of the valve mechanism will be made each second 50 hour period.

From the above statement, at what intervals will valve mechanism inspections be performed?
A. 100 hours.
B. 50 hours.
C. 75 hours.

K.8.5.1.8.a.1 K02
Check thrust bearing nuts for tightness on new or newly overhauled engines at the first 50-hour inspection following installation. Subsequent inspections on thrust bearing nuts will be made at each third 50-hour inspection.

From the above statement, at what intervals should you check the thrust bearing nut for tightness?
A. 150 hours.
B. 50 hours.
C. 100 hours.

L.8.5.1.9.a.1 L01
Certificated mechanics with a powerplant rating may perform the
A. annual inspection required by the FAR's on a powerplant or propeller or any component thereof, and may release the same to service.
B. annual inspection required by the FAR's on an airframe, powerplant, propeller, or any component thereof, and may release the same to service.
C. 100-hour inspection required by the FAR's on a powerplant, propeller, or any component thereof, and may release the same to service.

L.8.5.2.0.a.1 L01
A repair, as performed on an airframe, shall mean
A. the upkeep and preservation of the airframe including the component parts thereof.
B. the restoration of the airframe to a condition for safe operation after damage or deterioration.
C. simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.

L.8.5.2.1.a.1 L01
The replacement of fabric on fabric covered parts such as wings, fuselages, stabilizers, or control surfaces is considered to be a
A. minor repair unless the new cover is different in any way from the original cover.
B. minor repair unless the underlying structure is altered or repaired.
C. major repair even though no other alteration or repair is performed.

L.8.5.2.2.a.1 L01
Which is classified as a major repair?
A. The repair of portions of skin sheets by making additional seams.
B. Troubleshooting and repairing broken circuits in landing light wiring circuits.
C. Replacing safety belts.

L.8.5.2.3.a.1 L01
The 100-hour inspection required by FAR's for certain aircraft being operated for hire may be performed by
A. persons working under the supervision of an appropriately rated mechanic, but the aircraft must be approved by the mechanic for return to service.
B. appropriately rated mechanics only if they have an inspection authorization.
C. appropriately rated mechanics and approved by them for return to service.

L.8.5.2.4.a.1 L01
A person working under the supervision of a certificated mechanic with an airframe and powerplant rating is not authorized to perform
A. repair of a wing brace strut by welding.
B. a 100-hour inspection.
C. repair of an engine mount by riveting.

L.8.5.2.5.a.1 L01
Certificated mechanics, under their general certificate privileges, may
A. perform minor repairs to instruments.
B. perform 100-hour inspection of instruments.
C. perform minor alterations to instruments.

L.8.5.2.6.a.1 L01
An Airworthiness Directive requires that a propeller be altered. Certificated mechanics could
A. perform and approve the work for return to service if it is a minor alteration.
B. not perform the work because it is an alteration.
C. not perform the work because they are not allowed to perform and approve for return to service, repairs or alterations to propellers.

L.8.5.2.7.a.1 L01
The replacement of a damaged vertical stabilizer with a new identical stabilizer purchased from the aircraft manufacturer is considered a
A. minor alteration.
B. major repair.
C. minor repair.

L.8.5.2.8.a.1 L01
FAA certificated mechanics may
A. approve for return to service a major repair for which they are rated.
B. supervise and approve a 100-hour inspection.
C. approve for return to service a minor alteration they have performed appropriate to the rating(s) they hold.

L.8.5.2.9.a.1 L01
A certificated mechanic with a powerplant rating may perform the
A. annual inspection required by the FAR's on a powerplant or any component thereof and approve and return the same to service.
B. 100-hour inspection required by the FAR's on a powerplant or any component thereof and approve and return the same to service.
C. 100-hour inspection required by the FAR's on an airframe, powerplant, or any other component thereof and approve and return the same to service.

L.8.5.3.0.a.1 L01
What part of the FAR's prescribes the requirements for issuing mechanic certificates and associated ratings and the general operating rules for the holders of these certificates and ratings?
A. FAR Part 43.
B. FAR Part 91.
C. FAR Part 65.

L.8.5.3.1.a.1 L01
A certificated mechanic shall not exercise the privileges of the certificate and rating unless, within the preceding 24 months, the Administrator has found that the certificate holder is able to do the work or the certificate holder has
A. served as a mechanic under the certificate and rating for at least 18 months.
B. served as a mechanic under the certificate and rating for at least 12 months.
C. served as a mechanic under the certificate and rating for at least 6 months.

L.8.5.3.2.a.1 L01
(1) Certificated mechanics with an airframe rating may perform a minor repair to an airspeed indicator providing they have the necessary equipment available.
(2) Certificated mechanics with a powerplant rating may perform a major repair to a propeller providing they have the necessary equipment available.

Regarding the above statements,
A. only No. 1 is true.
B. neither No. 1 nor No. 2 is true.
C. only No. 2 is true.

L.8.5.3.3.a.1 L01
Who is responsible for determining that materials used in aircraft maintenance and repair are of the proper type and conform to the appropriate standards?
A. The installing person or agency.
B. The owner of the aircraft.
C. The manufacturer of the aircraft.

L.8.5.3.4.a.1 L01
Which of these publications contains standards for protrusion of bolts, studs, and screws through self locking nuts?
A. AC 43.13-2.
B. Aircraft Specifications or Type Certificate Data Sheets.
C. AC 43.13-1A.

L.8.5.3.5.a.1 L01
The replacement of a damaged engine mount with a new identical engine mount purchased from the aircraft manufacturer is considered a
A. minor alteration.
B. major repair.
C. minor repair.

L.8.5.3.6.a.1 L01
Who has the authority to approve for return to service a powerplant or propeller or any part thereof after a 100-hour inspection?
A. A mechanic with a powerplant rating.
B. Any certificated repairman.
C. Personnel of any certificated repair station.

L.8.5.3.7.a.1 L01
Instrument repairs may be performed
A. by the instrument manufacturer only.
B. by an FAA approved instrument repair station.
C. on airframe instruments by mechanics with an airframe rating.