

06/25/2009

Bank: (Aviation Mechanic General)

Airman Knowledge Test Question Bank

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The Learning Statement Reference Guide for Airman Knowledge Testing contains listings of learning statements with their associated codes. It can be located at: [http://www.faa.gov/training\\_testing/testing/airmen/media/LearningStatementReferenceGuide.pdf](http://www.faa.gov/training_testing/testing/airmen/media/LearningStatementReferenceGuide.pdf)

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1. AMG031 AMG

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.

2. AMG015 AMG

The basis for transformer operation in the use of alternating current is mutual

- A) inductance.
- B) capacitance.
- C) reactance.

3. AMG031 AMG

(Refer to General figure 2.) What is the total capacitance of a circuit containing three capacitors in parallel with capacitances of .02 microfarad, .05 microfarad, and .10 microfarad, respectively?

- A) 0.170  $\mu$ F.
- B) 0.125 pF.
- C) .0125  $\mu$ F.

4. AMG031 AMG

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.

5. AMG031 AMG

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.

6. AMG015 AMG

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.

7. AMG015 AMG

A 24-volt source is required to furnish 48 watts to a parallel circuit consisting of four resistors of equal value. What is the voltage drop across each resistor?

- A) 12 volts.
- B) 6 volts.
- C) 24 volts.

8. AMG031 AMG

(Refer to General 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.

9. AMG015 AMG

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.

10. AMG015 AMG

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.

11. AMG031 AMG

(Refer to General figure 11.) Find the voltage across the 8-ohm resistor.

- A) 8 volts.
- B) 20.4 volts.
- C) 24 volts.

12. AMG031 AMG

The purpose of providing a space underneath the plates in a lead acid battery's cell container is to

- A) allow for convection flow of the electrolyte in order to provide for cooling of the plates.
- B) prevent sediment buildup from contacting the plates and causing a short circuit.
- C) ensure that the electrolyte quantity ratio to the number of plates and plate area is adequate.

13. AMG031 AMG

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.

14. AMG031 AMG

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.

15. AMG031 AMG

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.

16. AMG015 AMG

The correct way to connect a test voltmeter in a circuit is

- A) in series with a unit.
- B) between the source voltage and the load.

C) in parallel with a unit.

17. AMG015 AMG

(Refer to General 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.

18. AMG015 AMG

.002KV equals

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

19. AMG015 AMG

(Refer to General figure 26.) Which of the logic gate output conditions is correct with respect to the given inputs?

- A) 1.
- B) 2.
- C) 3.

20. AMG015 AMG

(Refer to General 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.

21. AMG031 AMG

Forward biasing of a solid state device will cause the device to

- A) conduct via zener breakdown.
- B) conduct.
- C) turn off.

22. AMG031 AMG

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.

23. AMG031 AMG

(Refer to General figure 17.) The electrical symbol represented at number 5 is a variable

- A) inductor.
- B) resistor.
- C) capacitor.

24. AMG015 AMG

(Refer to General figure 15.) The No. 7 wire is used to

- A) close 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.

25. AMG031 AMG

A thermal switch or thermal protector, 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.

26. AMG015 AMG

(Refer to General 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.

27. AMG015 AMG

(Refer to General 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.

28. AMG015 AMG

(Refer to General 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.

29. AMG015 AMG

(Refer to General 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.

30. AMG015 AMG

(Refer to General 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.

31. AMG015 AMG

(Refer to General 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.

32. AMG001 AMG

For sketching purposes, almost all objects are composed of one or some combination of six basic shapes; these include the

- A) angle, arc, line, plane, square, and circle.
- B) triangle, circle, cube, cylinder, cone, and sphere.
- C) triangle, plane, circle, line, square, and sphere.

33. AMG001 AMG

(1) According to 14 CFR 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.

34. AMG001 AMG

(Refer to General 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.

35. AMG001 AMG

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.

36. AMG014 AMG

(Refer to General 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.

37. AMG014 AMG

In what type of electrical diagram are images of components used instead of conventional electrical symbols?

- A) A pictorial diagram.
- B) A schematic diagram.
- C) A block diagram.

38. AMG013 AMG

(Refer to General 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.

39. AMG014 AMG

Which of the following terms is/are used to indicate specific measured distances from the datum and/or other points identified by the manufacturer, to points in or on the aircraft?

- 1. Zone numbers.
- 2. Reference numbers.

3. Station numbers.

A) 1 and 3.

B) 3.

C) 2.

40. AMG011 AMG

(Refer to General 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.

41. AMG015 AMG

(Refer to General 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.

42. AMG002 AMG

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.

43. AMG002 AMG

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.

44. AMG002 AMG

When determining the empty weight of an aircraft, certificated under current airworthiness standards (14 CFR 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.

45. AMG002 AMG

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.

46. AMG002 AMG

The maximum weight as used in weight and balance control of a given aircraft can normally be found

- A) by adding the weight of full fuel, pilot, passengers, and maximum allowable baggage to the empty weight.
- B) in the Aircraft Specification or Type Certificate Data Sheet.
- C) by adding the empty weight and payload.

47. AMG002 AMG

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.

48. AMG002 AMG

Which statement is true regarding helicopter weight and balance?

- A) Regardless of internal or external loading, lateral axis cg control is ordinarily not a factor in maintaining helicopter weight and balance.
- B) The moment of tail-mounted components is subject to constant change.
- C) Weight and balance procedures for airplanes generally also apply to helicopters.

49. AMG002 AMG

What type of measurement is used to designate the arm in weight and balance computation?

- A) Distance.
- B) Weight.
- C) Weight x distance.

50. AMG002 AMG

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.

51. AMG002 AMG

What should be clearly indicated on the aircraft weighing form?

- A) Minimum allowable gross weight.
- B) Weight of unusable fuel.
- C) Weighing points.

52. AMG002 AMG

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.

53. AMG003 AMG

If it is necessary to weigh an aircraft with full fuel tanks, all fuel weight must be subtracted from the scale reading(s)

- A) except minimum fuel.
- B) including unusable fuel.
- C) except unusable fuel.

54. AMG002 AMG

Which of the following can provide the empty weight of an aircraft if the aircraft's weight and balance records become lost, destroyed, or otherwise inaccurate?

- A) Reweighing the aircraft.
- B) The applicable Aircraft Specification or Type Certificate Data Sheet.
- C) The applicable flight manual or pilot's operating handbook.

55. AMG003 AMG

Most modern aircraft are designed so that if all seats are occupied, full baggage weight is carried, and all fuel tanks are full, what will be the weight condition of the aircraft?

- A) It will be in excess of maximum takeoff weight.
- B) It will be at maximum basic operating weight (BOW).
- C) It will be at maximum taxi or ramp weight.

56. AMG036 AMG

The primary purpose of providing suitable bends in fluid and pneumatic metal tubing runs is to

- A) clear obstacles and make turns in aircraft structures.
- B) provide for access within aircraft structures.

C) prevent excessive stress on the tubing.

57. AMG017 AMG

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-818-16.
- B) AN-818-8.
- C) AN-818-5.

58. AMG017 AMG

Which of the following statements is/are correct in reference to flare fittings?

- 1. AN fittings have an identifying shoulder between the end of the threads and the flare cone.
  - 2. AC and AN fittings are considered identical except for material composition and identifying colors.
  - 3. AN fittings are generally interchangeable with AC fittings of compatible material composition
- A) 1.
  - B) 1 and 3.
  - C) 1, 2, and 3.

59. AMG042 AMG

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.

60. AMG037 AMG

Flexible hose used in aircraft systems is classified in size according to the

- A) outside diameter.
- B) wall thickness.
- C) inside diameter.

61. AMG036 AMG

The best tool to use when cutting aluminum tubing, or any tubing of moderately soft metal is a

- A) hand operated wheel-type tubing cutter.
- B) fine-tooth hacksaw.
- C) circular-saw equipped with an abrasive cutting wheel.

62. AMG010 AMG

Which statement is true regarding the variety of symbols utilized on the identifying color-code bands that are currently used on aircraft plumbing lines?

- A) Symbols are composed of various single colors according to line content.
- B) Symbols are always black against a white background regardless of line content.
- C) Symbols are composed of one to three contrasting colors according to line content.

63. AMG036 AMG

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.

64. AMG037 AMG

Flexible lines must be installed with

- A) enough slack to allow maximum flexing during operation.
- B) a slack of at least 10 to 12 percent of the length.
- C) a slack of 5 to 8 percent of the length.

65. AMG036 AMG

A scratch or nick in aluminum tubing can be repaired provided it does not

- A) appear in the heel of a bend.
- B) appear on the inside of a bend.
- C) exceed 10 percent of the tube OD on a straight section.

66. AMG036 AMG

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 that tubing section run (connection to connection) using the same size and material as the original.
- C) by cutting out the damaged section and soldering in a replacement section of tubing.

67. AMG036 AMG

The term "cold flow" is generally associated with

- A) the effects of low temperature gasses or liquids flowing in hose or tubing.
- B) impressions left in natural or synthetic rubber hose material.
- C) flexibility characteristics of various hose materials at low ambient temperatures.

68. AMG017 AMG

Generally speaking, bolt grip lengths should be

- A) one and one half times the thickness of the material which is fastened together.
- B) equal to the thickness of the material which is fastened together, plus approximately one diameter.
- C) equal to the thickness of the material which is fastened together.

69. AMG017 AMG

(Refer to General figure 43.) Identify the clevis bolt illustrated.

- A) 1.
- B) 3.
- C) 2.

70. AMG017 AMG

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.

71. AMG017 AMG

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.

72. AMG017 AMG

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.

73. AMG017 AMG

(Refer to General figure 42.) Which of the bolthead code markings shown identifies an AN corrosion resistant steel bolt?

- A) 1.
- B) 2.
- C) 3.

74. AMG019 AMG

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.

75. AMG019 AMG

The Society of Automotive Engineers (SAE) and the American Iron and Steel Institute use a numerical index system to identify the composition of various steels. In the number '4130' designating chromium molybdenum steel, the first digit indicates the

- A) percentage of the basic element in the alloy.
- B) percentage of carbon in the alloy in hundredths of a percent.
- C) basic alloying element.

76. AMG017 AMG

Unless otherwise specified, torque values for tightening aircraft nuts and bolts relate to

- A) clean, dry threads.
- B) clean, lightly oiled threads.
- C) both dry and lightly oiled threads.

77. AMG017 AMG

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.

78. AMG017 AMG

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.

79. AMG024 AMG

Liquid penetrant inspection methods may be used on which of the following?

- 1. porous plastics.
- 2. ferrous metals.
- 3. nonferrous metals.
- 4. smooth primer-sealed wood.
- 5. nonporous plastics.

- A) 2, 3, 4.
- B) 1, 2, 3.
- C) 2, 3, 5.

80. AMG024 AMG

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.

81. AMG024 AMG

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.

82. AMG098 AMG

Holes and a few projecting globules are found in a weld. What action should be taken?

- A) Reweld the defective portions.
- B) Remove all the old weld, and reweld the joint.
- C) Grind the rough surface smooth, inspect, and reweld all gaps/holes.

83. AMG098 AMG

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.

84. AMG098 AMG

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.

85. AMG098 AMG

(Refer to General figure 45.) What type weld is shown at A?

- A) Fillet.
- B) Butt.
- C) Lap.

86. AMG019 AMG

The reheating of a heat treated metal, such as with a welding torch

- A) has little or no effect on a metal's heat treated characteristics.
- B) can significantly alter a metal's properties in the reheated area.
- C) has a cumulative enhancement effect on the original heat treatment.

87. AMG019 AMG

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.

88. AMG019 AMG

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.

89. AMG024 AMG

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.

90. AMG024 AMG

In performing a dye penetrant inspection, the developer

- A) seeps into a surface crack to indicate the presence of a defect.
- B) acts as a blotter to produce a visible indication.

C) thoroughly cleans the surface prior to inspection.

91. AMG024 AMG

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.

92. AMG024 AMG

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.

93. AMG024 AMG

In magnetic particle inspection, a flaw that is perpendicular to the magnetic field flux lines generally causes

- A) a large disruption in the magnetic field.
- B) a minimal disruption in the magnetic field.
- C) no disruption in the magnetic field.

94. AMG024 AMG

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.

95. AMG057 AMG

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.

96. AMG057 AMG

The side clearances of piston rings are measured with a

- A) micrometer caliper gauge.
- B) thickness gauge.

C) dial gauge.

97. AMG057 AMG

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.

98. AMG057 AMG

What may be used to check the stem on a poppet-type valve for stretch?

- A) Dial indicator.
- B) Micrometer.
- C) Telescoping gauge.

99. AMG057 AMG

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.

100. AMG057 AMG

Which number represents the vernier scale graduation of a micrometer?

- A) .00001.
- B) .001.
- C) .0001.

101. AMG057 AMG

(Refer to General figure 48.) What does the micrometer read?

- A) .2974.
- B) .3004.
- C) .3108.

102. AMG057 AMG

(Refer to General figure 49.) The measurement reading on the micrometer is

- A) .2758.
- B) .2702.
- C) .2792.

103. AMG040 AMG

What must accompany fuel vaporization?

- A) An absorption of heat.
- B) A decrease in vapor pressure.
- C) A reduction in volume.

104. AMG040 AMG

A fuel that vaporizes too readily may cause

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

105. AMG040 AMG

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.

106. AMG040 AMG

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.

107. AMG040 AMG

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.

108. AMG040 AMG

The color of 100LL fuel is

- A) blue.
- B) colorless or straw.
- C) red.

109. AMG045 AMG

When towing a large aircraft

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

110. AMG045 AMG

When first starting to move an aircraft while taxiing, it is important to

- A) test the brakes.
- B) closely monitor the instruments.
- C) notify the control tower.

111. AMG045 AMG

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.

112. AMG058 AMG

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.

113. AMG045 AMG

Which of the following is the most satisfactory extinguishing agent for use on a carburetor or intake fire?

- A) Dry chemical.
- B) A fine, water mist.
- C) Carbon dioxide.

114. AMG045 AMG

If a radial engine has been shut down for more than 30 minutes, the propeller should be rotated through at least two revolutions to

- A) check for hydraulic lock.
- B) check for leaks.
- C) prime the engine.

115. AMG094 AMG

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.

116. AMG045 AMG

Generally, when an induction fire occurs during starting of a reciprocating engine, the first course of action should be to

- A) discharge carbon dioxide from a fire extinguisher into the air intake of the engine.
- B) continue cranking and start the engine if possible.
- C) close the throttle.

117. AMG095 AMG

Which of the following conditions has the most potential for causing engine damage when starting or attempting to start a turbine engine?

- A) Hung start.
- B) Cold start.
- C) Hot start.

118. AMG009 AMG

A primary reason why ordinary or otherwise nonapproved cleaning compounds should not be used when washing aircraft is because their use can result in

- A) hydrogen embrittlement in metal structures.
- B) hydrogen embrittlement in nonmetallic materials.
- C) a general inability to remove compound residues.

119. AMG009 AMG

When an anodized surface coating is damaged in service, it can be partially restored by

- A) applying a thin coat of zinc chromate primer.
- B) chemical surface treatment.
- C) use of a suitable mild cleaner.

120. AMG009 AMG

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.

121. AMG012 AMG

A primary cause of intergranular corrosion is

- A) improper heat treatment.
- B) dissimilar metal contact.
- C) improper application of primer.

122. AMG012 AMG

Spilled mercury on aluminum

- A) greatly 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.

123. AMG012 AMG

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.

124. AMG012 AMG

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.

125. AMG009 AMG

Which of the following may not be detectable even by careful visual inspection of the surface of aluminum alloy parts or structures?

- A) Filiform corrosion.
- B) Intergranular corrosion.
- C) Uniform etch corrosion.

126. AMG009 AMG

What should be done to prevent rapid deterioration when oil or grease come in contact with a tire?

- A) Wipe the tire thoroughly with a dry cloth, and then rinse with clean water.
- B) Wipe the tire with a dry cloth followed by a washdown and rinse with soap and water.

C) Wipe the tire with a cloth dampened with aromatic naphtha and then wipe dry with a clean cloth.

127. AMG012 AMG

Why is it important not to rotate the crankshaft after the corrosion preventive mixture has been put into the cylinders on engines prepared for storage?

- A) Engine damage can occur from hydraulic lock.
- B) Fuel may be drawn into one or more cylinders and dilute or wash off the corrosion preventive mixture.
- C) The seal of corrosion preventive mixture will be broken.

128. AMG012 AMG

One way of obtaining increased resistance to stress corrosion cracking is by

- A) relieving compressive stresses (via heat treatment) on the metal surface.
- B) creating compressive stresses (via shot peening) on the metal surface.
- C) producing nonuniform deformation while cold working during the manufacturing process.

129. AMG012 AMG

A nonelectrolytic chemical treatment for aluminum alloys to increase corrosion resistance and paint bonding qualities is called

- A) anodizing.
- B) alodizing.
- C) dichromating.

130. AMG044 AMG

(Refer to General figure 56.) Compute the area of the trapezoid.

- A) 24 square feet.
- B) 48 square feet.
- C) 10 square feet.

131. AMG044 AMG

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.

132. AMG055 AMG

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.

133. AMG044 AMG

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 inches x  $25\frac{5}{32}$  inches.
- B) 20 inches x  $24\frac{9}{64}$  inches.
- C) 20 inches x  $25\frac{9}{64}$  inches.

134. AMG044 AMG

A rectangular shaped fuel tank measures  $27\frac{1}{2}$  inches in length,  $\frac{3}{4}$  foot in width, and  $8\frac{1}{4}$  inches in depth. How many gallons will the tank contain?

(231 cu. in. = 1 gal.)

- A) 7.366
- B) 8.83
- C) 170.156

135. AMG044 AMG

(Refer to the figure 71.) What is the volume of a sphere with a radius of 4.5 inches?

- A) 47.71 cubic inches
- B) 381.7 square inches
- C) 381.7 cubic inches

136. AMG053 AMG

Which of the figures is using scientific notation?

- A) 1.
- B) 2.
- C) both 1 and 2.

137. AMG053 AMG

(Refer to the figure 69.) Solve the equation.

- A) 12.
- B) 60.
- C) 76.

138. AMG053 AMG

(Refer to General figure 59.) Solve the equation.

- A) +31.25
- B) -5.20
- C) -31.25

139. AMG053 AMG

Maximum life for a certain part is 1100 hours. Recently, 15 of these parts were removed from different aircraft with an average life of 835.3 hours. What percent of the maximum part life has been achieved?

- A) 75.9 percent.
- B) 76.9 percent.
- C) 75.0 percent.

140. AMG053 AMG

An airplane flying a distance of 750 miles used 60 gallons of gasoline. How many gallons will it need to travel 2,500 miles?

- A) 200.
- B) 31,250.
- C) 9,375.

141. AMG028 AMG

What is the status of data used as a basis for approving major repairs or alterations for return to service?

- A) Data must be least FAA-acceptable when it is used for that purpose.
- B) Data must be FAA-approved prior to its use for that purpose.
- C) Data may be FAA-approved after its use for that purpose.

142. AMG082 AMG

A certificated mechanic without an inspection authorization who signs the appropriate block on FAA Form 337 is doing what?

- A) Certifying that the work was done in accordance with the requirements of 14 CFR part 43.
- B) Approving the work for return to service.
- C) Certifying the maintenance information used as FAA-approved data.

143. AMG023 AMG

An FAA Form 337 is used to record and document

- A) preventive and unscheduled maintenance, and special inspections.

B) major and minor repairs, and major and minor alterations.

C) major repairs and major alterations.

144. AMG076 AMG

What is/are the appropriate action(s) concerning minor repairs performed on a certificated aircraft?

1. FAA Form 337's must be completed.

2. Entries must be made in the aircraft's maintenance record.

3. The owner of the aircraft must submit a record of all minor repairs to the FAA at least annually.

A) 1 and 2.

B) 2.

C) 2 and 3.

145. AMG086 AMG

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.

146. AMG076 AMG

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.

147. AMG023 AMG

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.

148. AMG076 AMG

Where is the record of compliance with Airworthiness Directives or manufacturers' service bulletins normally indicated?

- A) FAA Form 337.
- B) Aircraft maintenance records.
- C) Flight manual.

149. AMG022 AMG

Which statement is true regarding the requirements for maintenance record format?

- A) Any format that provides record continuity and includes the required information may be used.
- B) The format provided by the manufacturer of the aircraft must be retained.
- C) Any desired change from manufacturer provided format requires approval from the Federal Aviation Administration.

150. AMG086 AMG

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) verification that the maintenance or alterations were performed referencing approved maintenance data.

151. AMG027 AMG

Which of the following is Newtons First Law of Motion, generally termed the Law of Inertia?

- A) To every action there is an equal and opposite reaction.
- B) Force is proportional to the product of mass and acceleration.
- C) Every body persists in its state of rest, or of motion in a straight line, unless acted upon by some outside force.

152. AMG099 AMG

In physics, which of the following factors are necessary to determine power?

- 1. Force exerted.
  - 2. Distance moved.
  - 3. Time required.
- A) 1 and 2.
  - B) 2 and 3.
  - C) 1, 2, and 3.

153. AMG027 AMG

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.

154. AMG027 AMG

The boiling point of a given liquid varies

- A) directly with pressure.
- B) inversely with pressure.
- C) directly with density.

155. AMG055 AMG

An airplane wing is designed to produce lift resulting from

- A) positive air pressure below and above the wing's surface along with the downward deflection of air.
- B) negative air pressure below the wing's surface and positive air pressure above the wing's surface along with the downward deflection of air.
- C) positive air pressure below the wing's surface and negative air pressure above the wing's surface along with the downward deflection of air.

156. AMG007 AMG

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.

157. AMG007 AMG

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.

158. AMG007 AMG

The speed of sound in the atmosphere is most affected by variations in which of the following?

1. Sound frequency (cps).
  2. Ambient temperature.
  3. Barometric pressure.
- A) 1.

B) 2.

C) 3.

159. AMG007 AMG

The purpose of aircraft wing dihedral is to

- A) increase lateral stability.
- B) increase longitudinal stability.
- C) increase lift coefficient of the wing.

160. AMG007 AMG

If all, or a significant part of a stall strip is missing on an airplane wing, a likely result will be

- A) decreased lift in the area of installation at high angles of attack.
- B) asymmetrical lateral control at low angles of attack.
- C) asymmetrical lateral control at or near stall angles of attack.

161. AMG027 AMG

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.

162. AMG027 AMG

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.

163. AMG008 AMG

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.

164. AMG099 AMG

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.

165. AMG048 AMG

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.

166. AMG048 AMG

How long are AD compliance records required to be kept?

- A) Until the work is repeated or superseded by other work.
- B) For one year after the work is performed, or until the work is repeated or superseded by other work.
- C) They shall be retained, and then transferred with the aircraft when it is sold.

167. AMG026 AMG

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.

168. AMG054 AMG

What is the maximum penalty for cheating or other unauthorized conduct when taking an FAA mechanic test?

- A) Ineligibility to receive any certificate or rating for one year.
- B) Ineligibility to receive any certificate or rating for one year, and suspension or revocation of any certificate held.
- C) Ineligibility to receive any certificate or rating for one year, and suspension of any certificate held.

169. AMG014 AMG

(Refer to General figure 62.) The -100 in the title block (Area 1) is applicable to which doubler part number(s)?

- A) -101.
- B) -102.

C) Both.

170. AMG004 AMG

(Refer to General figure 62, 62A, & 62B as necessary.) Which doubler(s) require(s) heat treatment before installation?

A) -101.

B) -102.

C) Both.

171. AMG013 AMG

(Refer to General figure 62, 62A, & 62B as necessary.) How many parts will need to be fabricated by the mechanic in the construction and installation of one doubler?

A) 2.

B) 3.

C) 4.

172. AMG021 AMG

Specifications pertaining to an aircraft model manufactured under a type certificate, of which less than 50 are shown on the FAA Aircraft Registry, can be found in the

A) Aircraft Listing.

B) Summary of Discontinued Aircraft Specifications.

C) FAA Statistical Handbook of Civil Aircraft Specifications.

173. AMG097 AMG

Placards required on an aircraft are specified in

A) AC 43.13-1B.

B) the Federal Aviation Regulations under which the aircraft was type certificated.

C) Aircraft Specifications or Type Certificate Data Sheets.

174. AMG097 AMG

Where are technical descriptions of certificated propellers found?

A) Applicable Airworthiness Directives.

B) Aircraft Specifications.

C) Propeller Type Certificate Data Sheets.

175. AMG097 AMG

Type Certificate Data Sheets are issued for which of the following products?

A) Aircraft, engines, and propellers.

B) Aircraft, engines, and appliances.

C) Aircraft, engines, propellers, and appliances.

176. AMG051 AMG

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) 293 knots.
- C) 139 knots.

177. AMG079 AMG

Which is classified as a major repair?

- A) The splicing of skin sheets.
- B) Installation of new engine mounts obtained from the aircraft manufacturer.
- C) Any repair of damaged stressed metal skin.

178. AMG079 AMG

The replacement of a damaged engine mount with a new identical engine mount purchased from the aircraft manufacturer is considered a

- A) major or minor repair, depending upon the complexity of the installation.
- B) major repair.
- C) minor repair.

179. AMG082 AMG

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.

180. AMG082 AMG

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.

181. AMG082 AMG

Certificated mechanics with a powerplant rating may perform

- A) any inspection required by the Federal Aviation Regulations on a powerplant or propeller or any component thereof, and may release the same to service.
- B) 100-hour and/or annual inspections required by the Federal Aviation Regulations on powerplants, propellers, or any components thereof, and may release the same to service.
- C) 100-hour inspections required by the Federal Aviation Regulations on powerplants, propellers, or any components thereof, and may release the same to service.

182. AMG067 AMG

How long does the holder of a certificate issued under 14 CFR part 65 have to notify the FAA after any change in permanent mailing address?

- A) 30 days.
- B) 60 days.
- C) 90 days.

183. AMG063 AMG

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 or operator of the aircraft.
- C) The manufacturer of the aircraft.

184. AMG086 AMG

Who has the authority to approve for return to service a propeller after a 100-hour inspection?

- 1. A mechanic with a powerplant rating.
  - 2. Any certificated repairman.
  - 3. A non-certificated mechanic working under the supervision of a certificated mechanic with airframe and powerplant ratings.
- A) 1.
  - B) 1 and 3.
  - C) 2.