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Bank: (RTA - Airframe Questions)

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The FAA computer-assisted testing system is supported by a series of supplement publications. These publications, available through several aviation publishers, include the graphics, legends, and maps that are needed to successfully respond to certain test items.

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1. D07A AMA

When bending metal, the material on the outside of the curve stretches while the material on the inside of the curve compresses. That part of the material which is not affected by either stress is the

A) mold line.

B) bend tangent line.

C) neutral line.

2. D07A AMA

If it is necessary to compute a bend allowance problem and bend allowance tables are not available, the neutral axis of the bend can be

A) represented by the actual length of the required material for the bend.

B) found by adding approximately one half of the stock thickness to the bend radius.

C) found by subtracting the stock thickness from the bend radius.

3. D07A AMA

Unless otherwise specified, the radius of a bend is the

A) inside radius of the metal being formed.

B) inside radius plus one half the thickness of the metal being formed.

C) radius of the neutral axis plus one half the thickness of the metal being formed.

4. D07A AMA

The sharpest bend that can be placed in a piece of metal without critically weakening the part is called the

A) bend allowance.

B) minimum radius of bend.

C) maximum radius of bend.

5. D07A AMA

The most important factors needed to make a flat pattern layout are

A) radius, thickness, and mold line.

B) radius, thickness, and degree of bend.

C) the lengths of the legs (flat sections).

6. D07A AMA

A piece of sheet metal is bent to a certain radius. The curvature of the bend is referred to as the

A) bend allowance.

B) neutral line.

C) bend radius.

7. D07A AMA

When a piece of aluminum alloy is to be bent using a minimum radius for the type and thickness of material,

A) the piece should be bent slowly to eliminate cracking.

B) the layout should be made so that the bend will be 90° to the grain of the sheet.

C) less pressure than usual should be applied with the movable (upper) clamping bar.

8. D07A AMA

The purpose of a joggle is to

A) allow clearance for a sheet or an extrusion.

B) increase obstruction for a sheet or an extrusion.

C) decrease the weight of the part and still retain the necessary strength.

9. D07A AMA

A piece of flat stock that is to be bent to a closed angle of 15° must be bent through an angle of

A) 165°.

B) 105°.

C) 90°.

10. D07A AMA

(Refer to Airframe figure 6.) Determine the dimensions of A, B, and C in the flat layout.

Setback = .252

Bend allowance = .345

A) A = .748; B = 2.252; C = 2.004.

B) A = .748; B = 1.496; C = 1.248.

C) A = 1.252; B = 2.504; C = 1.752.

11. D07A AMA

(Refer to Airframe figure 6.) What is dimension D?

Setback = .252

Bend allowance = .345

A) 3.492.

B) 4.182.

C) 3.841.

12. D07A AMA

The sight line on a sheet metal flat layout to be bent in a cornice or box brake is measured and marked

A) one-half radius from either bend tangent line.

B) one radius from either bend tangent line.

C) one radius from the bend tangent line that is placed under the brake.

13. D07A AMA

(Refer to Airframe figure 7.) What is dimension F?

Setback at D = .095

Setback at E = .068

Bend allowance at D = .150

Bend allowance at E = .112

A) 4.836.

B) 5.936.

C) 5.738.

14. D07A AMA

On a sheet metal fitting layout with a single bend, allow for stretching by

A) adding the setback to each leg.

B) subtracting the setback from one leg.

C) subtracting the setback from both legs.

15. D07A AMA

The aluminum alloys used in aircraft construction are usually hardened by which method?

A) Cold working.

B) Aging.

C) Heat treatment.

16. D07A AMA

You can distinguish between aluminum and aluminum alloy by

A) filing the metal.

B) testing with an acetic acid solution.

C) testing with a 10 percent solution of caustic soda.

17. D07A AMA

The flat layout or blank length of a piece of metal from which a simple L shaped bracket 3 inches by 1 inch is to be bent depends upon the radius of the desired bend. The bracket which will require the greatest amount of material is one which has a bend radius of

A) 1/8 inch.

B) 1/2 inch.

C) 1/4 inch.

18. D07A AMA

(Refer to Airframe figure 4.) The length of flat A is

A) 3.750 inches.

B) 3.875 inches.

C) 3.937 inches.

19. D07A AMA

(Refer to Airframe figure 4.) The amount of material required to make the 90° bend is

A) 0.3436 inch.

B) 0.3717 inch.

C) 0.3925 inch.

20. D07A AMA

(Refer to Airframe figure 5.) What is the length of flat A?

A) 3.7 inches.

B) 3.8 inches.

C) 3.9 inches.

21. D07A AMA

(Refer to Airframe figure 5.) What is the flat layout dimension?

A) 7.0 inches.

B) 6.8 inches.

C) 6.6 inches.

22. D07A AMA

If a streamline cover plate is to be hand formed using a form block, a piece of dead soft aluminum should first be placed over the hollow portion of the mold and securely fastened in place. The bumping operation should be

A) distributed evenly over the face of the aluminum at all times rather than being started at the edges or center.

B) started by tapping the aluminum lightly around the edges and gradually working down into the center.

C) started by tapping the aluminum in the center until it touches the bottom of the mold and

then working out in all directions.

23. D05A AMA

What is indicated by a black 'smoky' residue streaming back from some of the rivets on an aircraft?

A) The rivets were excessively work hardened during installation.

B) Exfoliation corrosion is occurring inside the structure.

C) Fretting corrosion is occurring between the rivets and the skin.

24. D05A AMA

(Refer to Airframe figure 2.) Select the preferred drawing for proper countersinking.

A) All are acceptable.

B) 2.

C) 1.

25. D05A AMA

Which is correct concerning the use of a file?

A) Apply pressure on the forward stroke, only, except when filing very soft metals such as lead or aluminum.

B) A smoother finish can be obtained by using a double cut file than by using a single cut file.

C) The terms 'double cut' and 'second cut' have the same meaning in reference to files.

26. D05A AMA

A factor which determines the minimum space between rivets is the

A) length of the rivets being used.

B) diameter of the rivets being used.

C) thickness of the material being riveted.

27. D05A AMA

When repairing a small hole on a metal stressed skin, the major consideration in the design of the patch should be

A) the shear strength of the riveted joint.

B) to use rivet spacing similar to a seam in the skin.

C) that the bond between the patch and the skin is sufficient to prevent dissimilar metal corrosion.

28. D05A AMA

Which procedure is correct when using a reamer to finish a drilled hole to the correct size?

A) Turn the reamer in the cutting direction when enlarging the hole and in the opposite direction to remove from the hole.

B) Turn the reamer only in the cutting direction.

C) Apply considerable pressure on the reamer when starting the cut and reduce the pressure when finishing the cut.

29. D05A AMA

Repairs or splices involving stringers on the lower surface of stressed skin metal wings are usually

A) not permitted.

B) permitted only if the damage does not exceed 6 inches in any direction.

C) permitted but are normally more critical in reference to strength in tension than similar repairs to the upper surface.

30. D05A AMA

When straightening members made of 2024-T4, you should

A) straighten cold and reinforce.

B) straighten cold and anneal to remove stress.

C) apply heat to the inside of the bend.

31. D05A AMA

Clad aluminum alloys are used in aircraft because they

A) can be heat treated much easier than the other forms of aluminum.

B) are less subject to corrosion than uncoated aluminum alloys.

C) are stronger than unclad aluminum alloys.

32. D05A AMA

Aircraft structural units, such as spars, engine supports, etc., which have been built up from sheet metal, are normally

A) repairable, using approved methods.

B) repairable, except when subjected to compressive loads.

C) not repairable, but must be replaced when damaged or deteriorated.

33. D05A AMA

What should be the included angle of a twist drill for hard metal?

A) 118°.

B) 100°.

C) 90°.

34. D05A AMA

Parts fabricated from Alclad 2024-T3 aluminum sheet stock must have all

A) bends made with a small radius to develop maximum strength.

B) bends 90° to the grain.

C) scratches, kinks, tool marks, nicks, etc., held to a minimum.

35. D05A AMA

The monocoque fuselage relies largely on the strength of

A) bulkheads and longerons.

B) longerons and formers.

C) skin or covering.

36. D05A AMA

Which part(s) of a semi monocoque fuselage prevent(s) tension and compression from bending the fuselage?

A) The fuselage covering.

B) Longerons and stringers.

C) Bulkheads and skin.

37. D05A AMA

Rivet gauge, or transverse pitch is the distance between the

A) centers of rivets in adjacent rows.

B) centers of adjacent rivets in the same row.

C) heads of rivets in the same row.

38. D05A AMA

Which statement is true regarding a cantilever wing?

A) It has nonadjustable lift struts.

B) No external bracing is needed.

C) It requires only one lift strut on each side.

39. D05A AMA

(Refer to Airframe figure 1.) Which of the rivets shown will accurately fit the conical depression made by a 100° countersink?

A) 1.

B) 2.

C) 3.

40. D05A AMA

What is one of the determining factors which permits machine countersinking when flush riveting?

A) Thickness of the material and rivet diameter are the same.

B) Thickness of the material is less than the thickness of the rivet head.

C) Thickness of the material is greater than the thickness of the rivet head.

41. D05A AMA

What should be the included angle of a twist drill for soft metals?

A) 118°.

B) 90°.

C) 65°.

42. D05A AMA

What is the purpose of a gusset or gusset plate used in the construction and repair of aircraft structures?

A) To hold structural members in position temporarily until the permanent attachment has been completed.

B) To provide access for inspection of structural attachments.

C) To join and reinforce intersecting structural members.

43. D05A AMA

Select the alternative which best describes the function of the flute section of a twist drill.

A) Prevents overheating of the drill point.

B) Forms the area where the drill bit attaches to the drill motor.

C) Forms the cutting edges of the drill point.

44. D05A AMA

How many MS20470 AD-4-6 rivets will be required to attach a 10 x 5 inch plate, using a single row of rivets, minimum edge distance, and 4D spacing?

A) 56.

B) 54.

C) 52.

45. D05A AMA

Shallow scratches in sheet metal may be repaired by

A) burnishing.

B) buffing.

C) stop drilling.

46. D05A AMA

When comparing the machining techniques for stainless steel sheet material to those for aluminum alloy sheet, it is normally considered good practice to drill the stainless steel at a

A) higher speed with less pressure applied to the drill.

B) lower speed with more pressure applied to the drill.

C) lower speed with less pressure applied to the drill.

47. D05A AMA

A single lap sheet splice is to be used to repair a section of damaged aluminum skin. If a double row of 1/8-inch rivets is used, the minimum allowable overlap will be

A) 1/2 inch.

B) 3/4 inch.

C) 13/16 inch.

48. D05A AMA

Which statement is true regarding the inspection of a stressed skin metal wing assembly known to have been critically loaded?

A) If rivets show no visible distortion, further investigation is unnecessary.

B) If bearing failure has occurred, the rivet shanks will be joggled.

C) If genuine rivet tipping has occurred, groups of consecutive rivet heads will be tipped in the same direction.

49. D05A AMA

What is the minimum edge distance for aircraft rivets?

A) Two times the diameter of the rivet shank.

B) Two times the diameter of the rivet head.

C) Three times the diameter of the rivet shank.

50. D05A AMA

When drilling stainless steel, the drill used should have an included angle of

A) 90° and turn at a low speed.

B) 118° and turn at a high speed.

C) 140° and turn at a low speed.

51. D05A AMA

What is the minimum spacing for a single row of aircraft rivets?

A) Two times the diameter of the rivet shank.

B) Three times the length of the rivet shank.

C) Three times the diameter of the rivet shank.

52. D05A AMA

Longitudinal (fore and aft) structural members of a semi monocoque fuselage are called

A) spars and ribs.

B) longerons and stringers.

C) spars and stringers.

53. D06A AMA

The primary alloying agent of 2024-T36 is indicated by the number

A) 2.

B) 20.

C) 24.

54. D06A AMA

Which rivets should be selected to join two sheets of .032-inch aluminum?

A) MS20425D-4-3.

B) MS20470AD-4-4.

C) MS20455DD-5-3.

55. D06A AMA

When an MS20470D rivet is installed, its full shear strength is obtained

A) only after a period of age hardening.

B) by the cold working of the rivet metal in forming a shop head.

C) by heat treating just prior to being driven.

56. D06A AMA

Which of the following need not be considered when determining minimum rivet spacing?

A) Rivet diameter.

B) Rivet length.

C) Type of material being riveted.

57. D06A AMA

What is the purpose of refrigerating 2017 and 2024 aluminum alloy rivets after heat treatment?

A) To accelerate age hardening.

B) To relieve internal stresses.

C) To retard age hardening.

58. D06A AMA

Under certain conditions, type A rivets are not used because of their

A) low strength characteristics.

B) high alloy content.

C) tendency toward embrittlement when subjected to vibration.

59. D06A AMA

A rivet set used to drive MS20470 rivets should

A) have the same radius as the rivet head.

B) have a slightly greater radius than the rivet head.

C) be nearly flat on the end, with a slight radius on the edge to prevent damage to the sheet being riveted.

60. D06A AMA

The dimensions of an MS20430AD-4-8 rivet are

A) 1/8 inch in diameter and 1/4 inch long.

B) 1/8 inch in diameter and 1/2 inch long.

C) 4/16 inch in diameter and 8/32 inch long.

61. D06A AMA

Which part of the 2017-T36 aluminum alloy designation indicates the primary alloying agent used in its manufacture?

A) 2.

B) 17.

C) 20.

62. D06A AMA

A sheet metal repair is to be made using two pieces of 0.040-inch aluminum riveted together. All rivet holes are drilled for 3/32-inch rivets. The length of the rivets to be used will be

A) 1/8 inch.

B) 1/4 inch.

C) 5/16 inch.

63. D06A AMA

Most rivets used in aircraft construction have

A) dimples.

B) smooth heads without markings.

C) a raised dot.

64. D06A AMA

MS20426AD-6-5 indicates a countersunk rivet which has

A) a shank length of 5/16 inch (excluding head).

B) a shank length of 5/32 inch (excluding head).

C) an overall length of 5/16 inch.

65. D06A AMA

Which rivet may be used as received without further treatment?

A) 2024-T4.

B) 2117-T3.

C) 2017-T3.

66. D06A AMA

Heat treated rivets in the D and DD series that are not driven within the prescribed time after heat treatment or removal from refrigeration

A) must be reheat treated before use.

B) must be discarded.

C) may be returned to refrigeration and used later without reheat treatment.

67. D06A AMA

The identifying marks on the heads of aluminum alloy rivets indicate the

A) degree of dimensional and process control observed during manufacture.

B) head shape, shank size, material used, and specifications adhered to during manufacture.

C) specific alloy used in the manufacture of the rivets.

68. D06A AMA

A sheet metal repair is to be made using two pieces of 0.0625-inch aluminum riveted together. All rivet holes are drilled for 1/8-inch rivets. The length of the rivets to be used will be

A) 5/32 inch.

B) 3/16 inch.

C) 5/16 inch.

69. D06A AMA

(Refer to Airframe figure 3.) Which is the grip length of the flush rivet?

A) 1.

B) 2.

C) 3.

70. D06A AMA

Which rivet is used for riveting nickel steel alloys?

A) 2024 aluminum.

B) Mild steel.

C) Monel.

71. D06A AMA

Mild steel rivets are used for riveting

A) nickel steel parts.

B) magnesium parts.

C) steel parts.

72. D06A AMA

A DD rivet is heat treated before use to

A) harden and increase strength.

B) relieve internal stresses.

C) soften to facilitate riveting.

73. D06A AMA

When riveting dissimilar metals together, what precautions must be taken to prevent an electrolytic action?

A) Treat the surfaces to be riveted together with a process called anodic treatment.

B) Place a protective separator between areas of potential electrical difference.

C) Avoid the use of dissimilar metals by redesigning the unit according to the recommendations outlined in AC 43.13-1A.

74. D06A AMA

The length of a rivet to be used to join a sheet of .032-inch and .064-inch aluminum alloy should be equal to

A) two times the rivet diameter plus .064 inch.

B) one and one half times the rivet diameter plus .096 inch.

C) three times the rivet diameter plus .096 inch.

75. D06A AMA

What is generally the best procedure to use when removing a solid shank rivet?

A) Drill through the manufactured head and shank with a shank size drill and remove the rivet with a punch.

B) Drill to the base of the manufactured rivet head with a drill one size smaller than the rivet shank and remove the rivet with a punch.

C) Drill through the manufactured head and shank with a drill one size smaller than the rivet and remove the rivet with a punch.

76. D06A AMA

Joggles in removed rivet shanks would indicate partial

A) bearing failure.

B) torsion failure.

C) shear failure.

77. D06A AMA

Which rivet is used for riveting magnesium alloy structures?

A) Mild steel.

B) 5056 aluminum.

C) Monel.

78. D06A AMA

The length of rivet to be chosen when making a structural repair that involves the joining of 0.032-inch and 0.064-inch aluminum sheet, drilled with a No. 30 drill, is

A) 7/16 inch.

B) 5/16 inch.

C) 1/4 inch.

79. F04A AMA

The purpose of the vertical fin is to provide

A) directional stability.

B) longitudinal stability.

C) lateral stability.

80. F04A AMA

The vast majority of aircraft control cables are terminated with swaged terminals, that must be

A) corrosion treated to show compliance with the manufacturers requirements after the swaging operation.

B) pull tested to show compliance with the manufactures requirements after the swaging operation.

C) checked with a go-no-go gauge before and after, to show compliance with the manufacturers requirements after the swaging operation.

81. F04A AMA

What nondestructive checking method is normally used to ensure that the correct amount of swaging has taken place when installing swaged-type terminals on aircraft control cable?

A) Measure the finished length of the terminal barrel and compare with the beginning length.

B) Use a terminal gauge to check the diameter of the swaged portion of the terminal.

C) Check the surface of the swaged portion of the terminal for small cracks which indicate incomplete swaging.

82. F04A AMA

When inspecting a control cable turnbuckle for proper installation, determine that

A) no more than four threads are exposed on either side of the turnbuckle barrel.

B) the terminal end threads are visible through the safety hole in the barrel.

C) the safety wire ends are wrapped a minimum of four turns around the terminal end shanks.

83. F04A AMA

If all instructions issued by the swaging tool manufacturer are followed when swaging a cable terminal, the resultant swaged terminal strength should be

A) the full rated strength of the cable.

B) 80 percent of the full rated strength of the cable.

C) 70 percent of the full rated strength of the cable.

84. F04A AMA

Which is an acceptable safety device for a castle nut when installed on secondary structures?

A) Star washer.

B) Lockwasher.

C) Cotter pin.

85. F04A AMA

When used in close proximity to magnetic compasses, cotter pins are made of what material?

A) Corrosion resisting steel.

B) Anodized aluminum alloy.

C) Cadmium plated low carbon steel.

86. F04A AMA

When a fiber or nylon insert-type, self-locking nut can be threaded on a bolt or stud through the insert with only the fingers, it should be

A) re-torqued frequently.

B) rejected.

C) reused only in a different location.

87. F05A AMA

If the control stick of an aircraft with properly rigged flight controls is moved forward and to the right, the left aileron will move

A) up and the elevator will move down.

B) down and the elevator will move up.

C) down and the elevator will move down.

88. F05A AMA

The cable operated control system of an all metal aircraft, not incorporating a temperature compensating device, has been rigged to the correct tension in a heated hangar. If the aircraft is operated in very cold weather, the cable tension will

A) decrease when the aircraft structure and cables become cold.

B) increase when the aircraft structure and cables become cold.

C) be unaffected if stainless steel cable is installed.

89. F05A AMA

Very often, repairs to a control surface require static rebalancing of the control surface. Generally, flight control balance condition may be determined by

A) checking for equal distribution of weight throughout the control surface.

B) the behavior of the trailing edge when the surface is suspended from its hinge points.

C) suspending the control surface from its leading edge in the streamline position and checking weight distribution.

90. F05A AMA

Excessive wear on both of the sides of a control cable pulley groove is evidence of

A) pulley misalignment.

B) cable misalignment.

C) excessive cable tension.

91. F05A AMA

Fairleads should never deflect the alignment of a cable more than

A) 12°.

B) 8°.

C) 3°.

92. F05A AMA

Where does the breakage of control cable wires occur most frequently?

A) Breakage usually occurs where cables are swaged to turnbuckle and ball terminals.

B) Breakage usually occurs where cables pass over pulleys and through fairleads.

C) Breakage sites are unpredictable and usually occur randomly anywhere along the length of a cable.

93. F05A AMA

With which system is differential control associated?

A) Trim.

B) Aileron.

C) Elevator.

94. F05A AMA

Which statement concerning the 100-hour inspection of an airplane equipped with a push pull tube type control system is true?

A) The threaded rod ends should not be adjusted in length for rigging purposes because the rod ends have been properly positioned and staked during manufacture.

B) The terminal end threads of the turnbuckles should be visible through the safety hole in the barrel.

C) The threaded rod ends should be checked for the amount of thread engagement by means of the inspection hole provided.

95. F05A AMA

If control cables are adjusted properly and the control surfaces tend to vibrate, the probable cause is

A) worn attachment fittings.

B) oil can effects on the control surfaces.

C) excessive cable tension.

96. F05A AMA

Aircraft flight control trim systems must be designed and installed so that the

A) pilot can determine the relative position of the trim tab from the cockpit.

B) operating control and the trim tab will always move in the same direction.

C) trim system will disengage or become inoperative if the primary flight control system fails.

97. F05A AMA

Stability about the axis which runs parallel to the line of flight is referred to as

A) longitudinal stability.

B) lateral stability.

C) directional stability.

98. F05A AMA

The purpose of spring tabs or servo tabs is to

A) assist the pilot in moving the control surfaces.

B) contribute to the static balance of the control surface.

C) make in flight trim adjustments possible.

99. F05A AMA

Movement of the cockpit control toward the nosedown position during a ground operational check of the elevator trim tab system will cause the trailing edge of the trim tab to move in which direction?

A) Downward regardless of elevator position.

B) Upward regardless of elevator position.

C) Downward if the elevator is in the UP position and upward if the elevator is in the DOWN position.

100. F05A AMA

If the travel of an airplane's controls is correct but the cables are rigged exceptionally tight, what probable effect will this have when flying the airplane?

A) The airplane will tend to fall off on one wing.

B) The airplane will be heavy on the controls.

C) The pilot will be unable to fly the airplane hands off.

101. F05A AMA

During inspection of the flight control system of an airplane equipped with differential-type aileron control, side to side movement of the control stick will cause

A) each aileron to have a greater up travel (from the streamlined position) than down travel.

B) each aileron to have greater down travel (from the streamlined position) than up travel.

C) the left aileron to move through a greater number of degrees (from full up to full down) than the right aileron.

102. F05A AMA

A universal propeller protractor used to measure the degrees of aileron travel should be zeroed

A) with the aileron in the NEUTRAL position.

B) with the aileron in the DOWN position.

C) when the aircraft is in a level flight attitude.

103. F05A AMA

The universal propeller protractor can be used to measure

A) propeller track.

B) aspect ratio of a wing.

C) degrees of flap travel.

104. F05A AMA

(Refer to Airframe figure 8.) Identify the cable that is used in primary control systems and in other places where operation over pulleys is frequent.

A) 2.

B) 1.

C) 3.

105. F05A AMA

A tension regulator in the flight control cable system of a large all metal aircraft is used primarily to

A) increase the cable tension in cold weather.

B) provide a means of changing cable tension in flight.

C) retain a set tension.

106. F05A AMA

(Refer to Airframe figure 9.) When the outside air temperature is 80 °F, select the acceptable 3/16 cable tension range.

A) 130 pounds minimum, 140 pounds maximum.

B) 117 pounds minimum, 143 pounds maximum.

C) 120 pounds minimum, 140 pounds maximum.

107. F05A AMA

Differential control on an aileron system means that

A) the down travel is more than the up travel.

B) the up travel is more than the down travel.

C) one aileron on one wing travels further up than the aileron on the opposite wing to adjust for wash in and wash out.

108. F05A AMA

How are changes in direction of a control cable accomplished?

A) Pulleys.

B) Bell cranks.

C) Fairleads.

109. F05A AMA

If the control stick of an aircraft with properly rigged flight controls is moved rearward and to the left, the right aileron will move

A) down and the elevator will move down.

B) up and the elevator will move down.

C) down and the elevator will move up.

110. F05A AMA

Placing a piece of cloth around a stainless steel control cable and running it back and forth over the length of the cable is generally a satisfactory method of

A) applying par-al-ketone.

B) inspecting for broken wires.

C) inspecting for wear or corrosion.

111. F05A AMA

What is the smallest size cable that may be used in aircraft primary control systems?

A) 1/4 inch.

B) 5/16 inch.

C) 1/8 inch.

112. F05A AMA

After repairing or re-covering a rudder, the surface should be rebalanced

A) to its spanwise axis.

B) in its normal flight position.

C) to manufacturer's specifications.

113. F06A AMA

Why is it generally necessary to jack an aircraft indoors for weighing?

A) So aircraft may be placed in a level position.

B) So that air currents do not destabilize the scales.

C) So weighing scales may be calibrated to 0 pounds.

114. F06A AMA

Which should be accomplished before jacking an aircraft?

A) Install critical stress panels or plates.

B) Determine that the fuel tanks are empty.

C) Make sure the aircraft is leveled laterally.

115. K01A AMA

Aircraft tire pressure should be checked

A) using only a push on stick-type gauge having 1-pound increments.

B) at least once a week or more often.

C) as soon as possible after each flight.

116. K01A AMA

If the extended longitudinal axis of the main landing gear wheel assemblies intersects aft of the aircraft, the wheels can be termed as having

A) toe out.

B) toe in.

C) negative camber.

117. K01A AMA

What should be checked when a shock strut bottoms during a landing?

A) Air pressure.

B) Packing seals for correct installation.

C) Fluid level.

118. K01A AMA

What is the purpose of a compensating port or valve in a brake master cylinder of an independent brake system?

A) Assists in the master cylinder piston return.

B) Prevents fluid from flowing back to the reservoir.

C) Permits the fluid to flow toward or away from the reservoir as temperature changes.

119. K01A AMA

Overinflated aircraft tires may cause damage to the

A) brake linings.

B) wheel hub.

C) wheel flange.

120. K01A AMA

If an aircraft shock strut (air/oil type) bottoms upon initial landing contact, but functions correctly during taxi, the most probable cause is

A) low fluid.

B) low air charge.

C) a restricted metering pin orifice.

121. K01A AMA

Extension of an oleo shock strut is measured to determine the

A) amount of oil in the strut.

B) physical condition of the strut itself.

C) proper operating position of the strut.

122. K01A AMA

Debooster cylinders are used in brake systems primarily to

A) reduce brake pressure and maintain static pressure.

B) relieve excessive fluid and ensure a positive release.

C) reduce the pressure to the brake and increase the volume of fluid flow.

123. K01A AMA

If a shock strut bottoms after it has been properly serviced, the

A) strut should be disassembled and the metering pin orifice plate replaced.

B) air pressure should be increased.

C) strut should be removed, disassembled, and inspected.

124. K01A AMA

The purpose of a relief valve in a brake system is to

A) reduce pressure for brake application.

B) prevent the tire from skidding.

C) compensate for thermal expansion.

125. K01A AMA

If an airplane equipped with master cylinders and single disk brakes has excessive brake pedal travel, but the brakes are hard and effective, the probable cause is

A) the master cylinder one way cup is leaking.

B) worn brake linings.

C) worn brake disk causing excessive clearance between the notches on the perimeter of the disk and the splines or keys on the wheel.

126. K01A AMA

An automatic damping action occurs at the steering damper if for any reason the flow of high pressure fluid is removed from the

A) outlet of the steering damper.

B) inlet of the steering damper.

C) replenishing check valve.

127. K01A AMA

A high speed aircraft tire with a sound cord body and bead may be recapped

A) a maximum of three times.

B) only by the tire manufacturer.

C) an indefinite number of times.

128. K01A AMA

When servicing an air/oil shock strut with MIL-5606 the strut should be

A) collapsed and fluid added at the filler opening.

B) fully extended and fluid added at the filler opening.

C) partially extended and fluid added at the filler opening.

129. K01A AMA

Debooster valves are used in brake systems primarily to

A) ensure rapid application and release of the brakes.

B) reduce brake pressure and maintain static pressure.

C) reduce the pressure and release the brakes rapidly.

130. K01A AMA

Instructions concerning the type of fluid and amount of air pressure to be put in a shock strut are found

A) on the airplane data plate.

B) in the aircraft operations limitations.

C) in the aircraft manufacturer's service manual.

131. K01A AMA

The repair for an out of tolerance toe in condition of main landing gear wheels determined not to be the result of bent or twisted components consists of

A) shimming the axle in the oleo trunnion.

B) inserting, removing, or changing the location of washers or spacers at the center pivotal point of the scissor torque links.

C) placing shims or spacers behind the bearing of the out of tolerance wheel or wheels.

132. K01A AMA

On an air valve core stem, what indicates high-pressure type?

A) An embossed letter "NP".

B) An embossed letter "HP".

C) An embossed letter "H".

133. K01A AMA

The primary purpose for balancing aircraft wheel assemblies is to

A) prevent heavy spots and reduce vibration.

B) distribute the aircraft weight properly.

C) reduce excessive wear and turbulence.

134. K01A AMA

The removal, installation, and repair of landing gear tires by the holder of a private pilot certificate on an aircraft owned or operated is considered to be

A) a violation of the Federal Aviation Regulations.

B) a minor repair.

C) preventive maintenance.

135. K01A AMA

On all aircraft equipped with retractable landing gear, some means must be provided to

A) retract and extend the landing gear if the normal operating mechanism fails.

B) extend the landing gear if the normal operating mechanism fails.

C) prevent the throttle from being reduced below a safe power setting while the landing gear is retracted.

136. K01A AMA

When an air/oil type of landing gear shock strut is used, the initial shock of landing is cushioned by

A) compression of the air charge.

B) the fluid being forced through a metered opening.

C) compression of the fluid.

137. K01A AMA

Internal leakage in a brake master cylinder unit can cause

A) slow release of brakes.

B) the pedal to slowly creep down while pedal pressure is applied.

C) fading brakes.

138. K01A AMA

A sleeve, spacer, or bumper ring is incorporated in a landing gear oleo shock strut to

A) limit the extension of the torque arm.

B) limit the extension stroke.

C) reduce the rebound effect.

139. K01A AMA

The purpose of a sequence valve in a hydraulic retractable landing gear system is to

A) prevent heavy landing gear from falling too rapidly upon extension.

B) provide a means of disconnecting the normal source of hydraulic power and connecting the emergency source of power.

C) ensure operation of the landing gear and gear doors in the proper order.

140. K01A AMA

Power boost brake systems are used on aircraft that have

A) high landing speeds.

B) low normal hydraulic system pressure.

C) more than one brake assembly per axle.

141. K01A AMA

A pilot reports that the brake pedals have excessive travel. A probable cause is

A) worn brake rotors.

B) lack of fluid in the brake system.

C) oil or some foreign matter on the brake rotors and linings.

142. K01A AMA

The purpose of an orifice check valve is to

A) relieve pressure to a sensitive component.

B) restrict flow in one direction and allow free flow in the other.

C) relieve pressure in one direction and prevent flow in the other direction.

143. K01A AMA

(Refer to Airframe figure 10.) The trunnion nut on an aircraft landing gear requires a torque of 320 inch-pounds. To reach the nut, a 2-inch straight adapter must be used on an 18-inch torque wrench. How many foot-pounds will be indicated on the torque wrench when the required torque of the nut is reached?

A) 24.

B) 28.8.

C) 22.

144. K01A AMA

A special bolt in a landing gear attachment requires a torque value of 440 inch-pounds. How many foot-pounds are required?

A) 36.8.

B) 38.

C) 36.6.

145. K01A AMA

What condition would most likely cause excessive fluctuation of the pressure gauge when the hydraulic pump is operating?

A) Accumulator air pressure low.

B) Inadequate supply of fluid.

C) System relief valve sticking closed.

146. K01A AMA

An O ring intended for use in a hydraulic system using MIL-H-5606 (mineral base) fluid will be marked with

A) a blue stripe or dot.

B) one or more white dots.

C) a white and yellow stripe.

147. K01A AMA

A hydraulic hose identified as MIL-H-8794 will have a yellow stripe running the length of the hose. This stripe

A) is used to ensure that the hose is installed without excessive twisting.

B) identifies that the hose is for hydraulic fluid only.

C) identifies that the hose is constructed of synthetic rubber and may be suitable for a wide range of applications.

148. K01A AMA

What type of valve is used in the brake actuating line to isolate the emergency brake system from the normal power brake control valve system?

A) A bypass valve.

B) An orifice check valve.

C) A shuttle valve.

149. K01A AMA

A hydraulic system referred to as a 'power pack' system will

A) have an engine driven pump for greater pressure.

B) have all hydraulic power components located in one unit.

C) have a pressurized reservoir.

150. K01A AMA

A fully charged hydraulic accumulator provides

A) air pressure to the various hydraulic components.

B) a source for additional hydraulic power when heavy demands are placed on the system.

C) positive fluid flow to the pump inlet.

151. K01A AMA

What device in a hydraulic system with a constant delivery pump allows circulation of the fluid when no demands are on the system?

A) Pressure relief valve.

B) Shuttle valve.

C) Pressure regulator.

152. K01A AMA

Nose gear centering cams are used in many retractable landing gear systems. The primary purpose of the centering device is to

A) align the nosewheel prior to touchdown.

B) engage the nosewheel steering.

C) center the nosewheel before it enters the wheel well.

153. K01A AMA

When installing a chevron type seal in an aircraft hydraulic cylinder, the open side of the seal should face

A) opposite the direction of fluid pressure.

B) up or forward when the unit is installed in a horizontal position.

C) the direction of fluid pressure.

154. K01A AMA

Chines are used on some aircraft nose-wheel tires to help

A) nose gear extension at higher air-speeds.

B) reduce the possibility of hydroplaning.

C) deflect water away from the fuselage.

155. K01A AMA

How long should you wait after a flight before checking tire pressure?

A) At least 2 hours (3 hours in hot weather).

B) At least 3 hours (4 hours in hot weather).

C) At least 4 hours (5 hours in hot weather).

156. K01A AMA

A filter incorporating specially treated cellulose paper is identified as a

A) sediment trap.

B) cuno filter.

C) micronic filter.

157. K01A AMA

If a brake debooster is used in a hydraulic brake system, its position in the system will be

A) between the pressure manifold of the main hydraulic system and the power brake control valve.

B) between the brake control valve and the brake actuating cylinder.

C) in the brake pressure line between the brake pedal and the brake accumulator.

158. K01A AMA

The hydraulic packing seals used in a landing gear shock strut are

A) generally designed to be compatible with more than one type of fluid.

B) kept from direct contact with fluid by teflon or nylon backup rings.

C) used only with a specific type of fluid.

159. K01A AMA

Lockout deboosters are primarily pressure reducing valves that

A) allow full debooster piston travel without fluid from the high pressure side entering the low pressure chamber.

B) cannot allow full debooster piston travel without fluid from the high pressure side entering the low pressure chamber.

C) must be bled separately after brake bleeding has been completed.

160. K01A AMA

When a properly operating fusible plug has allowed a tire to deflate, the tire should be

A) replaced.

B) externally inspected for damage.

C) removed from the wheel and inspected for carcass and tread damage.

161. K01A AMA

What action, if any, should be taken when there is a difference of more than 5 pounds of air pressure in tires mounted as duals?

A) Replace both tires.

B) Correct the discrepancy and enter in the aircraft records.

C) Replace the tire with the lowest pressure.

162. K01A AMA

A landing gear position and warning system will provide a warning in the cockpit when the throttle is

A) retarded and gear is not down and locked.

B) advanced and gear is down and locked.

C) retarded and gear is down and locked.

163. K01A AMA

Excessive wear in the center of the tread of an aircraft tire is an indication of

A) incorrect camber.

B) excessive toe out.

C) overinflation.

164. K01A AMA

When an empty shock strut is filled with fluid, care should be taken to extend and compress the strut completely at least two times to

A) thoroughly lubricate the piston rod.

B) force out any excess fluid.

C) ensure proper packing ring seating and removal of air bubbles.

165. K01A AMA

In shock struts, chevron seals are used to

A) absorb bottoming effect.

B) prevent oil from escaping.

C) serve as a bearing surface.

166. K01A AMA

On most aircraft, the oil level of an air and oil shock strut is checked by

A) removing the oil filler plug and inserting a gauge.

B) measuring the length of the strut extension with a certain air pressure in the strut.

C) releasing the air and seeing that the oil is to the level of the filler plug.

167. K01A AMA

How can it be determined that all air has been purged from a master cylinder brake system?

A) By operating a hydraulic unit and watching the system pressure gauge for smooth, full scale deflection.

B) By noting whether the brake is firm or spongy.

C) By noting the amount of fluid return to the master cylinder upon brake release.

168. K01A AMA

The best safeguards against heat buildup in aircraft tires are

A) proper tire inflation, minimum braking, and ground rolls into the wind.

B) short ground rolls, slow taxi speeds, minimum braking, and proper tire inflation.

C) minimum braking, proper tire inflation, and long ground rolls.

169. K01A AMA

In brake service work, the term 'bleeding brakes' is the process of

A) withdrawing air only from the system.

B) withdrawing fluid from the system for the purpose of removing air that has entered the system.

C) replacing small amounts of fluid in reservoir.

170. K01A AMA

The left brake is dragging excessively on an airplane on which no recent brake service work has been performed. The most probable cause is

A) foreign particles stuck in the master cylinder compensating port.

B) excessively worn brake linings.

C) low fluid supply in the brake system reservoir.

171. K01A AMA

When bleeding aircraft brakes, one of the indications that the air has been purged from the system is

A) partial brake pedal travel.

B) full brake pedal travel.

C) firm brake pedals.

172. K01A AMA

What is one effect a restricted compensator port of a master cylinder will have on a brake system?

A) The brakes will operate normally.

B) The reservoir will be filled by reverse flow.

C) The restriction will cause slow release of the brakes.

173. K01A AMA

Aircraft brakes requiring a large volume of fluid to operate the brakes generally

A) use independent master cylinder systems.

B) do not use brake system accumulators.

C) use power brake control valves.

174. K01A AMA

What would be the effect if the piston return spring broke in a brake master cylinder?

A) The brakes would become spongy.

B) The brake travel would become excessive.

C) The brakes would drag.

175. K01A AMA

To prevent a very rapid extension of an oleo shock strut after initial compression resulting from landing impact,

A) various types of valves or orifices are used which restrict the reverse fluid flow.

B) the metering pin gradually reduces the size of the orifice as the shock strut extends.

C) the air is forced through a restricted orifice in the reverse direction.

176. K01A AMA

A pilot reports the right brake on an aircraft is spongy when the brake pedal is depressed in a normal manner. The probable cause is

A) the hydraulic master cylinder piston is sticking.

B) air in the brake hydraulic system.

C) the hydraulic master cylinder piston return spring is weak.

177. K01A AMA

Aside from an external leak in the line, what will cause parking brakes to continually bleed off pressure?

A) An internal leak in the master cylinder.

B) Insufficient hydraulic fluid in the reservoir.

C) Glazed brake linings.

178. K01A AMA

The metering pins in oleo shock struts serve to

A) lock the struts in the DOWN position.

B) retard the flow of oil as the struts are compressed.

C) meter the proper amount of air in the struts.

179. K01A AMA

After performing maintenance on an aircraft's landing gear system which may have affected the system's operation, it is usually necessary to

A) conduct a flight test.

B) re-inspect the area after the first flight.

C) make an operational check with the aircraft on jacks.

180. K01A AMA

Why do tire and wheel manufacturers often recommend that the tires on split rim wheels be deflated before removing the wheel from the axle?

A) To relieve the strain on the wheel retaining nut and axle threads.

B) As a safety precaution in case the bolts that hold the wheel halves together have been damaged or weakened.

C) To remove the static load imposed upon the wheel bearings by the inflated tire.

181. K01A AMA

A stripe or mark applied to a wheel rim and extending onto the sidewall of a tube type tire is a

A) slippage mark.

B) wheel-to-tire balance mark.

C) wheel weight reference mark..

182. K01A AMA

The braking action of a cleveland disk brake is accomplished by compressing a rotating brake disk between two opposite brake linings. How is equal pressure on both sides of the rotating disk assured?

A) By allowing the brake rotor to float to automatically equalize as pressure is applied to the rotor.

B) By allowing the caliper to float to automatically equalize as pressure is applied to the rotor.

C) By allowing the brake linings to automatically equalize as pressure is applied to the rotor.

183. K01A AMA

If it is determined that spongy brake action is not caused by air in the brake system, what is the next most likely cause?

A) Worn brake lining.

B) Internal leakage in the master cylinder.

C) Deteriorated flexible hoses.

184. K01A AMA

Many brake types can be adapted to operate mechanically or hydraulically. Which type is not adaptable to mechanical operation?

A) Single disk spot type.

B) Single servo type.

C) Expander tube type.

185. K01A AMA

Why do most aircraft tire manufacturers recommend that the tubes in newly installed tires be first inflated, fully deflated, and then reinflated to the correct pressure?

A) To allow the tube to position itself correctly inside the tire.

B) To eliminate all the air between the tube and the inside of the tire.

C) To test the entire assembly for leaks.

186. K01A AMA

Exposure to and/or storage near which of the following is considered harmful to aircraft tires?

1. Low humidity.

2. Fuel.

3. Oil.

4. Ozone.

5. Helium.

6. Electrical equipment.

7. Hydraulic fluid.

8. Solvents.

A) 2, 3, 4, 5, 6, 7, 8.

B) 1, 2, 3, 5, 7, 8.

C) 2, 3, 4, 6, 7, 8.

187. K01A AMA

A brake debooster valve is installed in systems where the high pressure of the hydraulic system (3000 psi) is used to operate brakes

A) that are designed to work with lower pressure.

B) that are used in conjunction with an antiskid system.

C) that are used on aircraft having high landing speeds.

188. L02A AMA

Which is a characteristic of synthetic base hydraulic fluid?

A) Low moisture retention.

B) High flash point.

C) Low flash point.

189. L02A AMA

Two types of hydraulic fluids currently being used in civil aircraft are

A) mineral base, and phosphate ester base.

B) mixed mineral base and phosphate ester base.

C) petroleum base and mixed mineral base.

190. L02A AMA

Characteristics of MIL-H-5606 hydraulic fluid are

A) light purple color, phosphate ester base, fire resistant, uses butyl rubber seals.

B) blue color, will burn, uses natural rubber seals.

C) red color, petroleum base, will burn, uses synthetic rubber seals.

191. L02A AMA

(1) Materials which are Skydrol compatible or resistant include most common aircraft metals and polyurethane and epoxy paints.

(2) Skydrol hydraulic fluid is compatible with nylon and natural fibers.

Regarding the above statements,

A) neither No. 1 nor No. 2 is true.

B) both No. 1 and No. 2 are true.

C) only No. 1 is true.

192. L02A AMA

Phosphate ester base hydraulic fluid is very susceptible to contamination from

A) teflon seal material.

B) water in the atmosphere.

C) ethylene propylene elastomers.

193. L02A AMA

How can the proper hydraulic fluid to be used in an airplane be determined?

A) Refer to the aircraft parts manual.

B) Consult the aircraft Type Certificate Data Sheet.

C) Consult the aircraft manufacturer's service manual.

194. L02A AMA

Components containing phosphate ester-base hydraulic fluid may be cleaned with

A) Carbon tetrachloride.

B) Naphtha.

C) Stoddard solvent.

195. L02A AMA

What is used to flush a system normally serviced with MIL-H-5606 hydraulic fluid?

A) Methyl ethyl ketone or kerosene.

B) Naphtha or varsol.

C) Lacquer thinner or trichlorethylene.

196. L02A AMA

Characteristics of MIL-H-7644 hydraulic fluid are

A) red color, petroleum base, will burn, synthetic rubber seals.

B) light purple color, phosphate ester base, fire resistant, butyl rubber seals.

C) blue color, vegetable base, will burn, natural rubber seals.

197. L02A AMA

Where can information be obtained about the compatibility of fire resistant hydraulic fluid with aircraft materials?

A) Manufacturer's technical bulletins.

B) Aircraft manufacturer's specifications.

C) AC 43.13-1A.

198. L02A AMA

Characteristics of MIL-H-8446 (Skydrol 500 A & B) hydraulic fluid are

A) blue color, phosphate ester base, fire resistant, butyl rubber seals.

B) light purple color, phosphate ester base, fire resistant, butyl rubber seals.

C) light green color, phosphate ester base, fire resistant, butyl rubber seals.

199. L02A AMA

Which of the following lists only desirable properties of a good hydraulic fluid that has chemical stability?

A) High viscosity, low flash point, high fire point.

B) High flash point, low viscosity, low fire point.

C) viscosity, chemical stability, high flash point, high fire point.

200. L02A AMA

What is the viscosity of hydraulic fluid?

A) The increase in volume of a fluid due to temperature change.

B) The fluid's ability to resist oxidation and deterioration for long periods.

C) The internal resistance of a fluid which tends to prevent it from flowing.

201. L02A AMA

If a hydraulic brake system uses neoprene rubber packing materials, the correct hydraulic fluid to service the system is

A) mineral base oil.

B) synthetic base oil.

C) phosphate ester base oil.

202. L02A AMA

If an aircraft hydraulic system requires mineral base hydraulic fluid, but phosphate ester base hydraulic fluid is used, what will be the effect on the system?

A) No effect.

B) System will be contaminated, fluids will not blend, and the seals will fail.

C) System will be contaminated, fluids will not blend, but there will be no seal problem.

203. L02A AMA

The internal resistance of a fluid which tends to prevent it from flowing is called

A) volatility.

B) viscosity.

C) acidity.

204. L02A AMA

Which is a characteristic of petroleum base hydraulic fluid?

A) Flammable under normal conditions.

B) Compatible to natural rubber seals and packings.

C) Nonflammable under all conditions.

205. L02A AMA

(1) When servicing aircraft hydraulic systems, use the type fluid specified in the aircraft manufacturer's maintenance manual or on the instruction plate affixed to the reservoir or unit.

(2) Hydraulic fluids for aircraft are dyed a specific color for each type of fluid.

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.

206. L02A AMA

Petroleum base hydraulic fluid is which color?

A) Purple.

B) Blue.

C) Red.

207. L02A AMA

Which of the following is adversely affected by atmospheric humidity if left unprotected?

1. MIL-H-5606 hydraulic fluid.

2. Skydrol hydraulic fluid.

3. None of the above.

A) 1 and 2.

B) 3.

C) 2.

208. L02A AMA

Which statement about fluids is correct?

A) Any fluid will completely fill its container.

B) All fluids are considered to be highly compressible.

C) All fluids readily transmit pressure.

209. L03A AMA

Which must be done before adjusting the relief valve of a main hydraulic system incorporating a pressure regulator?

A) Eliminate the action of the unloading valve.

B) Adjust all other system relief valves which have a lower pressure setting.

C) Manually unseat all system check valves to allow unrestricted flow in both directions.

210. L03A AMA

Many hydraulic reservoirs contain a small quantity of fluid which is not available to the main system pump. This fluid is retained to

A) prime the main system.

B) supply fluid to the auxiliary pump.

C) supply fluid to the pressure accumulator.

211. L03A AMA

The unit which causes one hydraulic operation to follow another in a definite order is called a

A) selector valve.

B) sequence valve.

C) shuttle valve.

212. L03A AMA

The purpose of a hydraulic pressure regulator is to

A) prevent the system pressure from rising above a predetermined amount due to thermal expansion.

B) boost the pressure in portions of the system.

C) relieve the pump of its load when no actuating units are being operated.

213. L03A AMA

Severe kickback of the emergency hydraulic hand pump handle during the normal intake stroke will indicate which of the following?

A) The hand pump inport check valve is sticking open.

B) The main system relief valve is set too high.

C) The hand pump outport check valve is sticking open.

214. L03A AMA

What type of valve in an aircraft hydraulic system permits fluid to flow freely in one direction, but restricts the rate at which fluid is allowed to flow in the other direction?

A) Check valve.

B) Orifice restrictor.

C) Orifice check valve.

215. L03A AMA

The main system pressure relief valve in a simple hydraulic system equipped with a power control valve should be adjusted

A) with the power control valve held in the CLOSED position.

B) while one or more actuating units are in operation.

C) with the power control valve in the OPEN position.

216. L03A AMA

A hydraulic accumulator is charged with an air preload of 1,000 PSI. When a hydraulic system pressure of 3,000 PSI is developed, the pressure on the air side of the accumulator will be

A) 1,000 PSI.

B) 3,000 PSI.

C) 4,000 PSI.

217. L03A AMA

After a hydraulic accumulator has been installed and air chamber charged, the main system hydraulic pressure gauge will not show a hydraulic pressure reading until

A) at least one selector valve has been actuated to allow fluid to flow into the fluid side of the accumulator.

B) the air pressure has become equal to the fluid pressure.

C) the fluid side of the accumulator has been charged.

218. L03A AMA

Using a hand pump, pressure of 100 PSI has been built up in a hydraulic system. The hand pump piston is 1 inch in diameter. A 1/2-inch line connects the hand pump to an actuating cylinder 2 inches in diameter. What is the pressure in the line between the hand pump and the actuator?

A) 100 PSI.

B) 150 PSI.

C) 200 PSI.

219. L03A AMA

Which seals are used with petroleum base hydraulic fluids?

A) Polyester.

B) Butyl rubber.

C) Buna-N.

220. L03A AMA

The air that is expended and no longer needed when an actuating unit is operated in a pneumatic system is

A) exhausted or dumped, usually overboard.

B) returned to the compressor.

C) charged or pressurized for use during the next operating cycle.

221. L03A AMA

Some hydraulic systems incorporate a device which is designed to remain open to allow a normal fluid flow in the line, but closed if the fluid flow increases above an established rate. This device is generally referred to as a

A) hydraulic fuse.

B) flow regulator.

C) metering check valve.

222. L03A AMA

When hydraulic system pressure control and relief units fail to function properly, how are most systems protected against overpressure?

A) A shear section on the main hydraulic pump drive shaft.

B) One or more hydraulic fuses installed in the pressure and return lines.

C) A shuttle valve interconnecting the main and emergency systems.

223. L03A AMA

How is the air in a hydraulic accumulator prevented from entering the fluid system?

A) By forcing the oil/air mixture through a centrifugal separating chamber that prevents the air from leaving the accumulator.

B) By physically separating the air chamber from the oil chamber with a flexible or movable separator.

C) By including a valve that automatically closes when the fluid level lowers to a preset amount.

224. L03A AMA

Most variable displacement aircraft hydraulic pumps in use

A) must be driven at a nearly constant speed in order to be practical for use.

B) are not practical for use with a closed center hydraulic system.

C) contain a built-in means of system pressure regulation.

225. L03A AMA

The primary function of the flap overload valve is to

A) prevent the flaps from being lowered at airspeeds which would impose excessive structural loads.

B) cause the flap segments located on opposite sides of the aircraft centerline to extend and retract together so that the aircraft will not become aerodynamically unbalanced to the extent that it becomes uncontrollable.

C) boost normal system pressure to the flaps in order to overcome the air loads acting on the relatively large flap area.

226. L03A AMA

If it is necessary to adjust several pressure regulating valves in a hydraulic system, what particular sequence, if any, should be followed?

A) Units most distant from the hydraulic pump should be adjusted first.

B) Units with the highest pressure settings are adjusted first.

C) Units are independent of each other, and therefore, no particular sequence is necessary.

227. L03A AMA

If an aircraft's constant pressure hydraulic system cycles more frequently than usual and no fluid leakage can be detected, the most probable cause is

A) a too high relief valve setting.

B) pump volume output too high.

C) low accumulator air preload.

228. L03A AMA

Unloading valves are used with many engine driven hydraulic pumps to

A) dampen out pressure surges.

B) relieve the pump pressure.

C) relieve system pressure.

229. L03A AMA

What safety device is usually located between the driving unit and hydraulic pump drive shaft?

A) Thermal relief valve.

B) Pump motor safety switch.

C) Pump drive coupling shear section.

230. L03A AMA

Which is true regarding the ground check of a flap operating mechanism which has just been installed?

A) If the time required to operate the mechanism increases with successive operations, it indicates the air is being worked out of the system.

B) If the time required to operate the mechanism decreases with successive operations, it indicates the air is being worked out of the system.

C) All hydraulic lines and components should be checked for leaks by applying soapy water to all connections.

231. L03A AMA

In a gear type hydraulic pump, a mechanical safety device incorporated to protect the pump from overload is the

A) bypass valve.

B) check valve.

C) shear pin.

232. L03A AMA

After installation of a rebuilt hydraulic hand pump, it is found that the handle cannot be moved in the pumping direction (pressure stroke). The most likely cause is an incorrectly installed

A) hand pump inport check valve.

B) inport/outport orifice check valve.

C) hand pump outport check valve.

233. L03A AMA

Pressure is a term used to indicate the force per unit area. Pressure is usually expressed in

A) pounds per square inch.

B) pounds per inch.

C) pounds per cubic inch.

234. L03A AMA

If two actuating cylinders which have the same cross sectional area but different lengths of stroke are connected to the same source of hydraulic pressure, they will exert

A) different amounts of force but will move at the same rate of speed.

B) equal amounts of force but will move at different rates of speed.

C) equal amounts of force and will move at the same rate of speed.

235. L03A AMA

What happens to the output of a constant displacement hydraulic pump when the hydraulic system pressure regulator diverts the fluid from the system to the reservoir?

A) The output pressure remains the same, but the volume reduces.

B) The output pressure reduces, but the volume remains the same.

C) The output pressure and volume remain the same.

236. L03A AMA

Heat exchanger cooling units are required in some aircraft hydraulic systems because of

A) fluid flammability.

B) high pressures and high rates of fluid flow.

C) the high heat generated from braking.

237. L03A AMA

Which valve installed in a hydraulic system will have the highest pressure setting?

A) Pressure regulator valve.

B) Main relief valve.

C) Thermal relief valve.

238. L03A AMA

How many of these seals are used with petroleum base hydraulic fluids?

A) Natural rubber, Ethylene-propylene.

B) Neoprene, Buna-N.

C) Natural rubber, Butyl rubber.

239. L03A AMA

If the hydraulic system pressure is normal while the engine driven pump is running, but there is no pressure after the engine has been shut off, it indicates

A) the system relief valve setting is too high.

B) no air pressure in the accumulator.

C) the pressure regulator is set too high.

240. L03A AMA

Although dents in the heel of a bend are not permissible, they are acceptable in the remainder of a hydraulic tube providing they are less than what percent of the tube diameter?

A) 5.

B) 10.

C) 20.

241. L03A AMA

The primary purpose of a hydraulic actuating unit is to transform

A) fluid motion into mechanical pressure and back again.

B) fluid pressure into useful work.

C) energy from one form to another.

242. L03A AMA

If hydraulic fluid is released when the air valve core of the accumulator is depressed, it is evidence of

A) excessive accumulator air pressure.

B) a leaking check valve.

C) a ruptured diaphragm or leaking seals.

243. L03A AMA

If an engine driven hydraulic pump of the correct capacity fails to maintain normal system pressure during the operation of a cowl flap actuating unit, the probable cause is

A) mechanical interference to the movement of the cowl flap.

B) a partial restriction in the inport of the selector valve.

C) restriction in the pump outlet.

244. L03A AMA

Hydraulic system thermal relief valves are set to open at a

A) lower pressure than the system relief valve.

B) higher pressure than the system relief valve.

C) lower pressure than the system pressure regulator.

245. L03A AMA

A loud hammering noise in a hydraulic system having an accumulator usually indicates

A) air in the fluid.

B) too much preload in the accumulator.

C) too low or no preload in the accumulator.

246. L03A AMA

How would the air pressure charge in the accumulator be determined if the engine is inoperative, but the system still has hydraulic pressure?

A) Read it directly from the main system pressure gauge with all actuators inoperative.

B) Build up system pressure with the emergency pump and then read the pressure on a gauge attached to the air side of the accumulator.

C) Operate a hydraulic unit slowly and note the pressure at which a rapid pressure drop begins as it goes toward zero.

247. L03A AMA

To check the air charge in a hydraulic accumulator,

A) reduce all hydraulic pressure, then observe the reading on the accumulator air gauge.

B) observe the first reading on the hydraulic system gauge while operating a component in the system.

C) read it directly from the auxiliary pressure gauge.

248. L03A AMA

An emergency supply of fluid is often retained in the main hydraulic system reservoir by the use of a standpipe. The supply line is connected to the

A) inlet of the main hydraulic system.

B) inlet of the emergency pump.

C) inlet of the main system pump.

249. L03A AMA

What is the main purpose of a pressurized reservoir in a hydraulic system?

A) Prevent tank collapse at altitude.

B) Prevent hydraulic pump cavitation.

C) Prevent hydraulic fluid from foaming.

250. L03A AMA

Chatter in a hydraulic system is caused by

A) excessive system pressure.

B) insufficient system pressure.

C) air in the system.

251. L03A AMA

Hydraulic fluid filtering elements constructed of porous paper are normally

A) cleaned and reused.

B) discarded at regular intervals and replaced with new filtering elements.

C) not approved for use in certificated aircraft.

252. L03A AMA

Before removing the filler cap on a pressurized hydraulic system, in order to service the system, you must

A) relieve the hydraulic system pressure.

B) pressurize all hydraulic components in the system.

C) relieve the air pressure.

253. L03A AMA

Hydraulic system accumulators serve which of the following functions?

1. Dampen pressure surges.

2. Supplement the system pump when demand is beyond the pump's capacity.

3. Store power for limited operation of components if the pump is not operating.

4. Ensure a continuous supply of fluid to the pump.

A) 2, 3.

B) 1, 2, 3, 4.

C) 1, 2, 3.

254. L03A AMA

Quick disconnect couplings in hydraulic systems provide a means of

A) easily replacing hydraulic lines in areas where leaks are common.

B) quickly connecting and disconnecting hydraulic lines and eliminate the possibility of contaminates entering the system.

C) quickly connecting and disconnecting hydraulic lines without loss of fluid or entrance of air into the system.

255. L03A AMA

Which seal/material is used with phosphate ester base hydraulic fluids?

A) Silicone rubber.

B) Butyl rubber.

C) Neoprene rubber.

256. L03A AMA

The purpose of restrictors in hydraulic systems is to

A) control the rate of movement of hydraulically operated mechanisms.

B) allow the flow of fluid in one direction only.

C) lower the operating pressure of selected components.

257. L03A AMA

A crossflow valve which is designed to bypass fluid from one side of an actuating cylinder to the other side, under certain conditions, may be found in some aircraft installed in the

A) engine cowl flap system.

B) landing gear system.

C) flap overload system.

258. L03A AMA

A common cause of slow actuation of hydraulic components is

A) cold fluid.

B) restricted orifices.

C) internal leakage in the actuating unit.

259. L03A AMA

A pilot reports that when the hydraulic pump is running, the pressure is normal. However, when the pump is stopped, no hydraulic pressure is available. This is an indication of a

A) leaking selector valve.

B) low accumulator fluid preload.

C) leaking accumulator air valve.

260. L03A AMA

If fluid is added to a reservoir in a constant pressure hydraulic system while the system is pressurized, what will result?

A) Fluid will spray violently out of the reservoir when the filler neck cap is removed.

B) The fluid level will increase when system pressure is reduced.

C) Air will be drawn into the system, when the filler neck cap is removed.

261. L03A AMA

In a hydraulic system that has a reservoir pressurized with turbine engine compressor bleed air, which unit reduces the air pressure between the engine and reservoir?

A) Relief valve.

B) Air bleed relief valve.

C) Air pressure regulator.

262. L03A AMA

In a typical high pressure pneumatic system, if the moisture separator does not vent accumulated water when the compressor shuts down, a likely cause is a

A) saturated chemical dryer.

B) malfunctioning pressure transmitter.

C) malfunctioning solenoid dump valve.

263. L03A AMA

Teflon hose that has developed a permanent set from being exposed to high pressure or temperature should

A) not be straightened or bent further.

B) not be reinstalled once removed.

C) be immediately replaced.

264. L03A AMA

A worn hydraulic pump shaft seal can normally be detected by

A) hydraulic fluid flowing from the pump drain line.

B) evidence of hydraulic fluid combined in the engine oil.

C) the presence of hydraulic fluid around the pump mounting pad.

265. L03A AMA

The hydraulic component that automatically directs fluid from either the normal source or an emergency source to an actuating cylinder is called a

A) bypass valve.

B) shuttle valve.

C) crossflow valve.

266. L03A AMA

Seals used with a petroleum base hydraulic fluid are identified by which color code?

A) Green dash.

B) Blue dot or stripe.

C) Yellow dot or stripe.

267. P07A AMA

The primary purpose of a fuel tank sump is to provide a

A) positive system of maintaining the design minimum fuel supply for safe operation.

B) place where water and dirt accumulations in the tank can collect and be drained.

C) reserve supply of fuel to enable the aircraft to land safely in the event of fuel exhaustion.

268. P07A AMA

Aircraft defueling should be accomplished

A) with the aircraft's communication equipment on and in contact with the tower in case of fire.

B) in a hangar where activities can be controlled.

C) in the open air for good ventilation.

269. P07A AMA

Integral fuel tanks on transport aircraft are

A) usually constructed of nonmetallic material.

B) readily removed from the aircraft.

C) formed by the aircraft structure.

270. P07A AMA

To prevent vapor lock in fuel lines at high altitude, some aircraft are equipped with

A) vapor separators.

B) direct injection type carburetors.

C) booster pumps.

271. P07A AMA

How may the antiknock characteristics of a fuel be improved?

A) By adding a knock inhibitor.

B) By adding a knock enhancer.

C) By adding a fungicide agent.

272. P07A AMA

If a bladder type fuel tank is to be left empty for an extended period of time, the inside of the tank should be coated with a film of

A) engine oil.

B) linseed oil.

C) ethylene glycol.

273. P07A AMA

What is the maximum vapor pressure allowable for an aircraft fuel?

A) 7 PSI.

B) 5 PSI.

C) 3 PSI.

274. P07A AMA

What can be done to eliminate or minimize the microbial growth problem in an aircraft jet fuel tank?

A) Use anti icing and antibacterial additives.

B) Add CO_2 as a purgative.

C) Keep the fuel tank topped off.

275. P07A AMA

The vapor pressure of aviation gasoline is

A) lower than the vapor pressure of automotive gasoline.

B) higher than the vapor pressure of automotive gasoline.

C) approximately 20 PSI at 100 °F.

276. P07A AMA

(1) If aviation gasoline vaporizes too readily, fuel lines may become filled with vapor and cause increased fuel flow.

(2) A measure of a gasoline's tendency to vapor lock is obtained from the Reid vapor pressure test.

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.

277. P07A AMA

When routing a fuel line between two rigidly mounted fittings the line should

A) have at least one bend between such fittings.

B) be a straight length of tubing and clamped to the aircraft structure.

C) have a flexible line added between two metal lines to allow for ease of installation.

278. P07A AMA

(1) On a large aircraft pressure refueling system, a pressure refueling receptacle and control panel will permit one person to fuel or defuel any or all fuel tanks of an aircraft.

(2) Because of the fuel tank area, there are more advantages to a pressure fueling system in light aircraft.

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.

279. P07A AMA

The type of fuel boost pump that separates air and vapor from the fuel before it enters the line to the carburetor is the

A) gear type pump.

B) centrifugal type pump.

C) sliding vane type pump.

280. P07A AMA

If an aircraft is fueled from a truck or storage tank which is known to be uncontaminated with dirt or water, periodic checks of the aircraft's fuel tank sumps and system strainers

A) can be eliminated except for the strainer check before the first flight of the day and the fuel tank sump check during 100-hour or annual inspections.

B) are still necessary due to the possibility of contamination from other sources.

C) can be sharply reduced since contamination from other sources is relatively unlikely and of little consequence in modern aircraft fuel systems.

281. P07A AMA

A fuel temperature indicator is located in the fuel tanks on some turbine powered airplanes to tell when the fuel may be

A) getting cold enough to form hard ice.

B) in danger of forming ice crystals.

C) about to form rime ice.

282. P07A AMA

What type of fuel booster pump requires a pressure relief valve?

A) Concentric.

B) Sliding vane.

C) Centrifugal.

283. P07A AMA

According to Part 23, what minimum required markings must be placed at or near each appropriate fuel filler cover for reciprocating engine-powered airplanes?

A) The word 'Avgas' and the minimum fuel grade.

B) The word 'Fuel' and usable fuel capacity.

C) The word 'Avgas' and the total fuel capacity.

284. P07A AMA

Why is it necessary to vent all aircraft fuel tanks?

A) To ensure a positive head pressure for a submerged boost pump.

B) To exhaust fuel vapors.

C) To limit pressure differential between the tank and atmosphere.

285. P07A AMA

Why are centrifugal type boost pumps used in fuel systems of aircraft operating at high altitude?

A) Because they are positive displacement pumps.

B) To supply fuel under pressure to engine driven pumps.

C) To permit cooling air to circulate around the motor.

286. P07A AMA

Flapper valves are used in fuel tanks to

A) reduce pressure.

B) prevent a negative pressure.

C) act as check valves.

287. P07A AMA

Fuel boost pumps are operated

A) to provide a positive flow of fuel to the engine.

B) primarily for fuel transfer.

C) automatically from fuel pressure.

288. P07A AMA

What is one disadvantage of using aromatic aviation fuels?

A) A fuel intercooler is required.

B) Deteriorates rubber parts.

C) Results in low fuel volatility.

289. P07A AMA

What minimum required markings must be placed on or near each appropriate fuel filler cover on utility category aircraft?

A) The word 'Avgas' and the minimum fuel grade, and the total fuel tank capacity.

B) The word 'Avgas' and the minimum fuel grade or designation for the engines, and the usable fuel tank capacity.

C) The word 'Avgas' and the minimum fuel grade .

290. P07A AMA

The purpose of the baffle plate in a fuel tank is to

A) provide an expansion space for the fuel.

B) resist fuel surging within the fuel tank.

C) provide internal structural integrity.

291. P07A AMA

What precautions must be observed if a gravity feed fuel system is permitted to supply fuel to an engine from more than one tank at a time?

A) The tank airspaces must be interconnected.

B) The fuel outlet ports of each tank must have the same cross sectional area.

C) Each tank must have a valve in its outlet that automatically shuts off the line when the tank is

empty.

292. P07A AMA

When inspecting a fuel system, you should check all valves located downstream of boost pumps with the pumps

A) at idle.

B) dormant.

C) operating.

293. Q03A AMA

Why are the iron cores of most induction coils laminated?

A) To reduce the core reluctance.

B) To increase the core permeability.

C) To reduce the effects of eddy currents.

294. Q03A AMA

One advantage of using ac electrical power in aircraft is

A) that ac electrical motors can be reversed while dc motors cannot.

B) greater ease in stepping the voltage up or down.

C) that the effective voltage is 1.41 times the maximum instantaneous voltage; therefore, less power input is required.

295. Q03A AMA

Certain transport aircraft use ac electrical power for all normal operation and battery furnished dc electrical power for standby emergency use. In aircraft of this type that operate no dc generators, the batteries are kept charged by

A) inverters which use the aircraft's ac generators as a source of power.

B) alternators which use the aircraft's generators as a source of power.

C) rectifiers which use the aircraft's ac generators as a source of power.

296. Q03A AMA

The voltage in an ac transformer secondary that contains twice as many loops as the primary will be

A) greater and the amperage less than in the primary.

B) greater and the amperage greater than in the primary.

C) less and the amperage greater than in the primary.

297. Q03A AMA

If the positive field lead between a generator and a generator control panel breaks and is shorted while the engine is running, a voltmeter connected to generator output would indicate

A) zero voltage.

B) residual voltage.

C) normal voltage.

298. Q03A AMA

What is a method used for restoring generator field residual magnetism?

A) Flash the fields.

B) Reseat the brushes.

C) Energize the armature.

299. Q03A AMA

The major advantages of alternating current (AC) over direct current (DC) is the fact that its current and voltage can easily be increased or decreased

A) by means of a inverter.

B) by means of a rectifier.

C) by means of a transformer.

300. Q03A AMA

Which of the following must be accomplished when installing an anticollision light?

A) Install a switch independent of the position light switch.

B) Use shielded electrical cable to assure fail safe operation.

C) Connect the anticollision light to the aircraft position light switch.

301. Q03A AMA

The strength of the core of an electromagnet depends upon the material from which it is constructed and which of the following?

A) The number of turns of wire in the coil and the applied voltage.

B) The number of turns of wire in the coil and the amount of current (amperes) passing through the coil.

C) The size (cross section) and the number of turns of wire in the coil and the applied voltage.

302. Q03A AMA

In troubleshooting an electrical circuit, if an ohmmeter is properly connected across a circuit component and some value of resistance is read,

A) the component has continuity and is open.

B) either the component or the circuit is shorted.

C) the component has continuity and is not open.

303. Q03A AMA

In an ac circuit with no phase lead or lag, which is true?

A) Real power is zero.

B) Real power is greater than apparent power.

C) Real power equals apparent power.

304. Q03A AMA

How are generators rated?

A) Watts at rated voltage.

B) Amperes at rated voltage.

C) The impedance at rated voltage.

305. Q03A AMA

How is a shunt wound dc generator connected?

A) One field is shunted across the other.

B) Both fields are shunted across the armature.

C) The field and armature are shunted with a capacitor.

306. Q03A AMA

The poles of a generator are laminated to

A) reduce flux losses.

B) increase flux concentration.

C) reduce eddy current losses.

307. Q03A AMA

What is the frequency of an alternator dependent upon?

A) Voltage.

B) RPM.

C) Current.

308. Q03A AMA

The inductor type inverter output voltage is controlled by the

A) number of poles and the speed of the motor.

B) voltage regulator.

C) dc stator field current.

309. Q03A AMA

Residual voltage is a result of magnetism in the

A) field windings.

B) field shoes.

C) armature.

310. Q03A AMA

An aircraft electrical circuit control relay is

A) an electrically operated switch.

B) a device which converts electrical energy to kinetic energy.

C) any conductor which receives electrical energy and passes it on with little or no resistance.

311. Q03A AMA

The generator rating is usually found stamped on the

A) firewall.

B) generator.

C) engine.

312. Q03A AMA

If any one generator in a 24-volt dc system shows low voltage, the most likely cause is

A) an out of adjustment voltage regulator.

B) shorted or grounded wiring.

C) a defective reverse current cutout relay.

313. Q03A AMA

A battery generator system provides direct current. On installations requiring alternating current from the battery generator system, it is necessary to have

A) a transformer.

B) an inverter.

C) a variable resistor between the battery and generator.

314. Q03A AMA

A voltage regulator controls generator voltage by changing the

A) resistance in the generator output circuit.

B) current in the generator output circuit.

C) resistance of the generator field circuit.

315. Q03A AMA

When dc generators are operated in parallel to supply power for a single load, their controls include an equalizer circuit to assure that all generators share the load equally. The equalizer circuit operates by

A) increasing the output of the low generator to equal the output of the high generator.

B) decreasing the output of the high generator to equal the output of the low generator.

C) increasing the output of the low generator and decreasing the output of the high generator until they are equal.

316. Q03A AMA

What is the maximum amount of time a circuit can be in operation and still be an intermittent

duty circuit?

A) One minute.

B) Two minutes.

C) Three minutes.

317. Q03A AMA

The most common method of regulating the voltage output of a compound dc generator is to vary the

A) current flowing through the shunt field coils.

B) total effective field strength by changing the reluctance of the magnetic circuit.

C) resistance of the series field circuit.

318. Q03A AMA

(Refer to Airframe figure 19.) Upon completion of the landing gear extension cycle, the green light illuminated and the red light remained lit. What is the probable cause?

A) Short in the down limit switch.

B) Short in the gear safety switch.

C) Short in the up limit switch.

319. Q03A AMA

How can the direction of rotation of a dc electric motor be changed?

A) Interchange the wires which connect the motor to the external power source.

B) Reverse the electrical connections to either the field or armature windings.

C) Rotate the positive brush one commutator segment.

320. Q03A AMA

Aircraft which operate only ac generators (alternators) as a primary source of electrical power normally provide current suitable for battery charging through the use of

A) a stepdown transformer and a rectifier.

B) an inverter and a voltage dropping resistor.

C) a dynamotor with a half wave dc output.

321. Q03A AMA

During inspection of an anticollision light installation for condition and proper operation, it should be determined that

A) electrical or mechanical interconnections are provided so that the anticollision light will operate at all times that the position light switch is in the ON position.

B) an appropriately rated fuse is in position at the light to protect the connecting wiring against electrical faults.

C) the anticollision light can be operated independently of the position lights.

322. Q03A AMA

Major adjustments on equipment such as regulators, contactors, and inverters are best accomplished outside the airplane on test benches with necessary instruments and equipment. Adjustment procedure should be as outlined by

A) the equipment manufacturer.

B) the FAA.

C) aircraft technical orders.

323. Q03A AMA

When using an ohmmeter to check the continuity of a generator field coil, the coil should

A) be removed from the generator housing.

B) show high resistance when the meter prods are connected to the terminals of the coil.

C) show very low resistance if it is a series field coil.

324. Q03A AMA

(Refer to Airframe figure 18.) Which of the batteries are connected together incorrectly?

A) 1.

B) 2.

C) 3.

325. Q03A AMA

The purpose of a rectifier in an electrical system is to change

A) the frequency of alternating current.

B) direct current to alternating current.

C) alternating current to direct current.

326. Q03A AMA

Static inverters are electronic devices that change DC to AC with the

A) use of an oscillator.

B) properties of an exclusive OR gate.

C) input from an amplifier control by integrated circuits.

327. Q02A AMA

During inspection of the terminal strips of an aircraft electrical system, it should be determined that

A) only locknuts have been used for terminal attachment to the studs.

B) the terminal studs are anchored against rotation.

C) only plain nuts and lockwashers have been used for terminal attachment to the studs.

328. Q02A AMA

How does the routing of coaxial cables differ from the routing of electrical wiring?

A) Coaxial cables are routed parallel with stringers or ribs.

B) Coaxial cables are routed at right angles to stringers or ribs.

C) Coaxial cables are routed as directly as possible.

329. Q02A AMA

In aircraft electrical systems, automatic reset circuit breakers

A) should not be used as circuit protective devices.

B) are useful where only temporary overloads are normally encountered.

C) must be used in all circuits essential to safe operation of the aircraft.

330. Q02A AMA

A certain switch is described as a single pole, double throw switch (SPDT). The throw of a switch indicates the number of

A) circuits each pole can complete through the switch.

B) terminals at which current can enter or leave the switch.

C) places at which the operating device (toggle, plunger, etc.) will come to rest and at the same time open or close a circuit.

331. Q02A AMA

When considering an alteration, the criteria upon which the selection of electric cable size should be based are

A) applied voltage and allowable voltage drop.

B) current carrying capacity and allowable voltage drop.

C) current carrying capacity and applied voltage.

332. Q02A AMA

What is an important factor in selecting aircraft fuses?

A) The current exceeds a predetermined value.

B) The voltage rating should be lower than the maximum circuit voltage.

C) Capacity matches the needs of the circuit.

333. Q02A AMA

What is the advantage of a current limiter?

A) It breaks circuit quickly.

B) It can be reset easily.

C) It will take overload for a short period.

334. Q02A AMA

What is the advantage of a circuit breaker when compared to a fuse?

A) Never needs replacing.

B) Always eliminates the need of a switch.

C) Resettable and reusable.

335. Q02A AMA

The circuit breaker in the instrument lighting system protects the

A) lights from too much current.

B) wiring from too much current.

C) wiring from too much voltage.

336. Q02A AMA

A circuit protection device called a current limiter is essentially a slow-blow fuse and is designed to be used in

A) 400 cycle AC circuits.

B) heavy power circuits.

C) starter-generator circuits.

337. Q02A AMA

Which of the following copper electrical cable sizes should be selected to replace a No. 6 aluminum electrical cable?

A) No. 4.

B) No. 6.

C) No. 8.

338. Q02A AMA

In installations where the ammeter is in the generator or alternator lead, and the regulator system does not limit the maximum current that the generator or alternator can deliver, the ammeter can be redlined at what percent of the generator or alternator rating?

A) 50.

B) 75.

C) 100.

339. Q02A AMA

Bonding connections should be tested for

A) resistance value.

B) amperage value.

C) reactance.

340. Q02A AMA

What kind of switch should you install in a single wire circuit that required the switch to be manually held in the ON position?

A) Single pole, single throw (SPST), two position normally open (NO).

B) Single pole, single throw (SPST), single-position.

C) Single pole, double throw (SPDT), single-position normally open (NO).

341. Q02A AMA

Where electric cables must pass through holes in bulkheads, formers, ribs, firewalls, etc., the wires should be protected from chafing by

A) wrapping with electrical tape.

B) using a suitable grommet.

C) wrapping with plastic.

342. Q02A AMA

If it is necessary to use an electrical connector where it may be exposed to moisture, the mechanic should

A) coat the connector with grease.

B) use a special moisture proof type.

C) spray the connector with varnish or zinc chromate.

343. Q02A AMA

The three kinds of circuit-protection devices used most commonly in aircraft circuits are

A) circuit breakers, resistors, and current limiters.

B) circuit breakers, fuses, and current limiters.

C) circuit breakers, capacitors, and current limiter plug-ins mechanical reset types.

344. Q02A AMA

If a wire is installed so that it comes in contact with some moving parts, what protection should be given the wire?

A) Wrap with soft wire solder into a shield.

B) Wrap with friction tape.

C) Pass through conduit.

345. Q02A AMA

In the American Wire Gauge (AWG) system of numbers used to designate electrical wire sizes, the number assigned to a size is related to its

A) combined resistance and current carrying capacity.

B) current carrying capacity.

C) cross sectional area.

346. Q02A AMA

What is the purpose of the selection of derated switches for known continuous load current applications?

A) To calculate the voltage drop across the circuit.

B) To prevent short circuits in the motor field windings.

C) To obtain reasonable switch efficiency and service life.

347. Q02A AMA

A circuit breaker is installed in an aircraft electrical system primarily to protect the

A) circuit and should be located as close to the source as possible.

B) circuit and should be located as close to the unit as possible.

C) electrical unit in the circuit and should be located as close to the source as possible.

348. Q02A AMA

Oil canning of the sides of aluminum or steel electrical junction boxes is considered to be

A) normal operation in vibration prone areas.

B) a shorting hazard.

C) acceptable operation.

349. Q02A AMA

Electric circuits are protected from overheating by means of

A) thermocouples.

B) shunts.

C) fuses.

350. Q02A AMA

What is normally used to bond noncontinuous stainless steel aircraft components?

A) Stainless steel jumpers.

B) Copper jumpers.

C) Aluminum jumpers.

351. Q02A AMA

Aircraft fuse capacity is rated in

A) volts.

B) ohms.

C) amperes.

352. Q02A AMA

When adding a rheostat to a light circuit to control the light intensity, it should be connected in

A) parallel with the light.

B) series with the light.

C) series parallel with the light switch.

353. Q02A AMA

If one switch is used to control all navigation lights, the lights are most likely connected

A) in series with each other and parallel to the switch.

B) in series with each other and in series with the switch.

C) parallel to each other and in series with the switch.

354. Q02A AMA

Electric wiring installed in aircraft without special enclosing means (open wiring) offers the advantages of ease of installation, simple maintenance, and reduced weight. When bundling open wiring, the bundles should

A) be limited as to the number of cables to minimize damage from a single electrical fault.

B) include at least one shielded cable to provide good bonding of the bundle to the airframe.

C) be limited to a minimum bend radius of five times the bundle diameter to avoid excessive stresses on the cable insulation.

355. Q02A AMA

Grounding is electrically connecting a conductive object to the primary structure. One purpose of grounding is to

A) prevent current return paths.

B) allow static charge accumulation.

C) prevent development of radio frequency potentials.

356. Q02A AMA

Which of the following should be accomplished in the installation of aircraft wiring?

A) Support the bundle to structure and/ or solid fluid lines to prevent chafing damage.

B) Provide adequate slack in the wire bundle to compensate for large changes in temperature.

C) Locate the bundle above flammable fluid lines and securely clamp to structure.

357. Q02A AMA

What protection to wires and cables does conduit provide when used in aircraft installations?

A) Electromagnetic.

B) Mechanical.

C) Structural.

358. Q02A AMA

When using the voltage drop method of checking circuit resistance, the

A) input voltage must be maintained at a constant value.

B) output voltage must be maintained at a constant value.

C) input voltage must be varied.

359. Q02A AMA

The nominal rating of electrical switches refers to continuous

A) current rating with the contacts open.

B) voltage rating with the contacts closed.

C) current rating with the contacts closed.

360. Q02A AMA

Aircraft electrical junction boxes located in a fire zone are usually constructed of

A) asbestos.

B) cadmium plated steel.

C) stainless steel.

361. Q02A AMA

To help minimize radio interference a capacitor will largely eliminate and provide a steady direct current if the capacitor is connected to the generator in

A) parallel.

B) series.

C) series/ parallel.

362. Q02A AMA

The primary considerations when selecting electric cable size are

A) current carrying capacity and allowable voltage drop.

B) the voltage and amperage of the load it must carry.

C) the system voltage and cable length.

363. Q02A AMA

The navigation lights of some aircraft consist of a single circuit controlled by a single switch which has an ON position and an OFF position, with no additional positions possible. This switch is referred to as a

A) double pole, single throw (DPST), two position switch.

B) single pole, double throw (SPDT), two position switch.

C) single pole, single throw (SPST), two position switch.

364. Q02A AMA

If the (+) terminal of a voltmeter is connected to the (-) terminal of the source voltage and the (-) terminal of the meter is connected to the (+) terminal of the source voltage, the voltmeter will read

A) correctly.

B) low voltage.

C) backwards.

365. Q02A AMA

If several long lengths of electrical cable are to be installed in rigid conduit, the possibility of damage to the cable as it is pulled through the conduit will be reduced by

A) dusting the cable with powdered graphite.

B) dusting the cable with powdered soapstone.

C) applying a light coat of dielectric grease.

366. R02A AMA

Landing gear warning systems usually provide which of the following indications?

A) Red light for unsafe gear, no light for gear down, green light for gear up.

B) Green light for gear up and down, red light for unsafe gear.

C) Red light for unsafe gear, green light for gear down, no light for gear up.

367. R02A AMA

(1) A dc selsyn system is a widely used electrical method of indicating a remote mechanical movement or position.

(2) A synchro type indicating system is an electrical system used for transmitting information from one point to another.

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.

368. R02A AMA

Which of the following conditions is most likely to cause the landing gear warning signal to sound?

A) Landing gear locked down and throttle advanced.

B) Landing gear locked down and throttle retarded.

C) Landing gear not locked down and throttle retarded.

369. R02A AMA

(Refer to Airframe figure 20.) What is the minimum circumstance that will cause the landing gear warning horn to indicate an unsafe condition?

A) All gears up and one throttle retarded.

B) Any gear up and both throttles retarded.

C) Any gear not down and locked, and one throttle retarded.

370. R02A AMA

Where is the landing gear safety switch usually located?

A) On the main gear shock strut.

B) On the landing gear drag brace.

C) On the pilot's control pedestal.

371. R02A AMA

What safety device is actuated by the compression and extension of a landing gear strut?

A) Uplock switch.

B) Downlock switch.

C) Ground safety switch.

372. R02A AMA

In most modern hydraulically actuated landing gear systems, the order of gear and fairing door operation is controlled by

A) sequence valves.

B) shuttle valves.

C) microswitches.

373. R02A AMA

What landing gear warning device(s) is/are incorporated on retractable landing gear aircraft?

A) A visual indicator showing gear position.

B) A light which comes on when the gear is fully down and locked.

C) A horn or other aural device and a red warning light.

374. R02A AMA

When a landing gear safety switch on a main gear strut closes at liftoff, which system is deactivated?

A) Landing gear position system.

B) Antiskid system.

C) Aural warning system.

375. R02A AMA

The rotor in an autosyn remote indicating system uses

A) an electromagnet.

B) a permanent magnet.

C) neither an electromagnet nor a permanent magnet.

376. R02A AMA

The basic difference between an autosyn and a magnesyn indicating system is the

A) rotor.

B) transmitter.

C) receiver.

377. R02A AMA

The rotor in a magnesyn remote indicating system uses

A) a permanent magnet.

B) an electromagnet.

C) an electromagnet and a permanent magnet.

378. R02A AMA

Which of the following are some uses for a dc selsyn system?

1. Indicates position of retractable landing gear.

2. Indicates the angle of incidence of an aircraft.

3. Indicates the altitude of an aircraft.

4. Indicates cowl flaps or oil cooler door position.

5. Indicates fuel quantity.

6. Indicates the rate of climb of an aircraft.

7. Indicates position of wing flaps.

A) 1, 4, 5, 7.

B) 2, 3, 4, 5.

C) 2, 3, 5, 6.

379. R02A AMA

Microswitches are used primarily as limit switches to

A) limit generator output.

B) control electrical units automatically.

C) prevent overcharging of a battery.

380. R02A AMA

(Refer to Airframe figure 19.) Which repair should be made if the gear switch was placed in UP position and the gear does not retract?

A) Replace electrical wire No. 15.

B) Replace the down limit switch.

C) Replace electrical wire No. 12.

381. R02A AMA

(Refer to Airframe figure 19.) What is the indication of the red landing gear position light under the following conditions?

Aircraft on jacks.

Landing gear in transit.

Warning horn sounding.

A) extinguished.

B) flashing.

C) illuminated.

382. T02A AMA

Built-in aircraft fire extinguishing systems are ordinarily charged with

A) carbon dioxide and nitrogen.

B) halogenated hydrocarbons and nitrogen.

C) sodium bicarbonate and nitrogen.

383. T02A AMA

In reference to aircraft fire extinguishing systems,

(1) during removal or installation, the terminals of discharge cartridges should be grounded or shorted.

(2) before connecting cartridge terminals to the electrical system, the system should be checked with a voltmeter to see that no voltage exists at the terminal connections.

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.

384. T02A AMA

The thermal switches of a bimetallic thermal switch type fire detection system are heat sensitive units that complete circuits at a certain temperature. They are connected in

A) parallel with each other, and in parallel with the indicator lights.

B) parallel with each other, but in series with the indicator lights.

C) series with each other, but in parallel with the indicator lights.

385. T02A AMA

(Refer to Airframe figure 21.) Using the chart, determine the temperature range for a fire extinguishing agent storage container with a pressure of 330 PSIG. (Consider 330 PSIG for both minimum and maximum pressure.)

A) 47 to 73 °F.

B) 47 to 71 °F.

C) 45 to 73 °F.

386. T02A AMA

(Refer to Airframe figure 21.) Determine what pressure is acceptable for a fire extinguisher when the surrounding area temperature is 33 °F. (Rounded to the nearest whole number.)

A) 215 to 302 PSIG.

B) 214 to 301 PSIG.

C) 215 to 301 PSIG.

387. T02A AMA

On a periodic check of fire extinguisher containers, the pressure was not between minimum and maximum limits. What procedure should be followed?

A) Release pressure if above limits.

B) Replace the extinguisher container.

C) Increase pressure if below limits.

388. T02A AMA

In some fire extinguishing systems, evidence that the system has been intentionally discharged is indicated by the absence of a

A) red disk on the side of the fuselage.

B) green disk on the side of the fuselage.

C) yellow disk on the side of the fuselage.

389. T02A AMA

If a fire extinguisher cartridge is removed from a discharge valve, it should be

A) pressure checked.

B) used only on the original discharge valve assembly.

C) replaced with a new cartridge.

390. T02A AMA

Which of the following are fire precautions which must be observed when working on an oxygen system?

1. Display 'No Smoking' placards.

2. Provide adequate fire fighting equipment.

3. Keep all tools and oxygen servicing equipment free from oil or grease.

4. Avoid checking aircraft radio or electrical systems.

A) 1, 3, and 4.

B) 1, 2, and 4.

C) 1, 2, 3, and 4.

391. T02A AMA

The thermocouple fire warning system is activated by a

A) certain temperature.

B) core resistance drop.

C) rate of temperature rise.

392. T02A AMA

Maintenance of fire detection systems includes the

A) repair of damaged sensing elements.

B) removal of excessive loop or element material.

C) replacement of damaged sensing elements.

393. T02A AMA

A carbon dioxide (CO2) hand held fire extinguisher may be used on an electrical fire if the

A) horn is nonmetallic.

B) handle is insulated.

C) horn is nonmagnetic.

394. T02A AMA

Which fire extinguishing agent is considered to be the least toxic?

A) Carbon dioxide.

B) Bromotrifluoromethane (Halon 1301).

C) Bromochloromethane (Halon 1011).

395. T02A AMA

The types of fire extinguishing agents for aircraft interior fires are

A) water, carbon dioxide, dry chemical, and halogenated hydrocarbons.

B) water, dry chemical, methyl bromide, and chlorobromomethane.

C) water, carbon tetrachloride, carbon dioxide, and dry chemical.

396. T02A AMA

A thermocouple in a fire detection system causes the warning system to operate because

A) it generates a small current when heated.

B) heat decreases its electrical resistance.

C) it expands when heated and forms a ground for the warning system.

397. T02A AMA

The proper fire extinguishing agent to use on an aircraft brake fire is

A) water.

B) carbon dioxide.

C) dry powder chemical.

398. T02A AMA

Why does the Fenwal fire detection system use spot detectors wired parallel between two separate circuits?

A) A control unit is used to isolate the bad system in case of malfunction.

B) This installation is equal to two systems: a main system and a reserve system.

C) A short may exist in either circuit without causing a false fire warning.

399. T02A AMA

A fire extinguisher container can be checked to determine its charge by

A) attaching a remote pressure gauge.

B) weighing the container and its contents.

C) a hydrostatic test.

400. T02A AMA

What is the color code for fire extinguisher lines?

A) Brown.

B) Yellow.

C) Red and green.