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Bank: (Aviation Mechanic General)

Airman Knowledge Test Question Bank

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The Learning Statement Reference Guide for Airman Knowledge Testing contains listings of learning statements with their associated codes. It can be located at:

http://www.faa.gov/training_testing/testing/airmen/media/LearningStatementReferenceGuide.pdf

1. AMG031 AMG

In an ac circuit, the effective voltage is

- A) equal to the maximum instantaneous voltage.
- B) greater than the maximum instantaneous voltage.
- C) less than the maximum instantaneous voltage.

2. AMG015 AMG

Which requires the most electrical power during operation?

(Note: 1 horsepower = 746 watts)

- A) A 12-volt motor requiring 8 amperes.
- B) Four 30-watt lamps in a 12-volt parallel circuit.
- C) Two lights requiring 3 amperes each in a 24-volt parallel system.

3. AMG031 AMG

(Refer to General figure 11.) Find the total current flowing in the wire between points C and D.

- A) 6.0 amperes.
- B) 2.4 amperes.
- C) 3.0 amperes.

4. AMG015 AMG

A 48-volt source is required to furnish 192 watts to a parallel circuit consisting of three resistors of equal value. What is the value of each resistor?

- A) 36 ohms.
- B) 4 ohms.
- C) 12 ohms.

5. AMG015 AMG

(Refer to General figure 6.) If resistor R5 is disconnected at the junction of R4 and R3 as shown, what will the ohmmeter read?

- A) 2.76 ohms.
- B) 3 ohms.
- C) 12 ohms.

6. AMG015 AMG

What will a voltmeter read if properly connected across a closed switch in a circuit with electrical power on?

- A) Voltage drop in the component(s) the switch is connected to.
- B) System voltage.

C) Zero voltage.

7. AMG015 AMG

(Refer to General figure 16.) With power to the bus and the fuel selector switched to the right hand tank, how many relays in the system are operating?

- A) Three.
- B) Two.
- C) Four.

8. AMG014 AMG

(Refer to General figure 34.) What would be the minimum diameter of 4130 round stock required for the construction of the clevis that would produce a machined surface?

- A) 55/64 inch.
- B) 1 inch.
- C) 7/8 inch.

9. AMG013 AMG

What sections illustrate particular parts of an object?

- A) Removed.
- B) Revolved.
- C) Half.

10. AMG011 AMG

(Refer to General figure 40.) Determine the proper tension for a 3/16-inch cable (7 x 19 extra flex) if the temperature is 87 °F.

- A) 135 pounds.
- B) 125 pounds.
- C) 140 pounds.

11. AMG015 AMG

(Refer to General figure 39.) Determine the minimum wire size of a single cable in a bundle carrying a continuous current of 20 amperes 10 feet from the bus to the equipment in a 28-volt system with an allowable 1-volt drop.

- A) No. 12.
- B) No. 14.
- C) No. 16.

12. AMG002 AMG

When computing the maximum forward loaded CG of an aircraft, minimum weights, arms, and moments should be used for items of useful load that are located aft of the

- A) rearward CG limit.
- B) forward CG limit.
- C) datum.

13. AMG002 AMG

The CG range in single rotor helicopters is

- A) much greater than for airplanes.
- B) approximately the same as the CG range for airplanes.
- C) more restricted than for airplanes.

14. AMG002 AMG

In a balance computation of an aircraft from which an item located aft of the datum was removed, use

- A) (-)weight X (+)arm (-)moment.
- B) (-)weight X (-)arm (+)moment.
- C) (+)weight X (-)arm (-)moment.

15. AMG002 AMG

Which statement is true regarding helicopter weight and balance?

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

16. AMG003 AMG

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

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

17. AMG017 AMG

Which coupling nut should be selected for use with 1/2-inch aluminum oil lines which are to be assembled using flared tube ends and standard AN nuts, sleeves, and fittings?

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

18. AMG042 AMG

Which tubings have the characteristics (high strength, abrasion resistance) necessary for use in a high pressure (3,000 PSI) hydraulic system for operation of landing gear and flaps?

- A) 2024-T or 5052-0 aluminum alloy.
- B) Corrosion resistant steel annealed or 1/4H.
- C) 1100-1/2H or 3003-1/2H aluminum alloy.

19. AMG010 AMG

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

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

20. AMG036 AMG

Hydraulic tubing, which is damaged in a localized area to such an extent that repair is necessary, may be repaired

- A) by cutting out the damaged area and utilizing a swaged tube fitting to join the tube ends.
- B) only by replacing the that tubing section run (connection to connection) using the same size and material as the original.
- C) by cutting out the damaged section and soldering in a replacement section of tubing.

21. AMG036 AMG

The term "cold flow" is generally associated with

- A) the effects of low temperature gasses or liquids flowing in hose or tubing.

- B) impressions left in natural or synthetic rubber hose material.
- C) flexibility characteristics of various hose materials at low ambient temperatures.

22. AMG017 AMG

A bolt with a single raised dash on the head is classified as an

- A) AN corrosion resistant steel bolt.
- B) NAS standard aircraft bolt.
- C) NAS close tolerance bolt.

23. AMG017 AMG

Where is an AN clevis bolt used in an airplane?

- A) For tension and shear load conditions.
- B) Where external tension loads are applied.
- C) Only for shear load applications.

24. AMG019 AMG

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

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

25. AMG017 AMG

How is the locking feature of the fiber type locknut obtained?

- A) By the use of an unthreaded fiber locking insert.
- B) By a fiber insert held firmly in place at the base of the load carrying section.
- C) By making the threads in the fiber insert slightly smaller than those in the load carrying section.

26. AMG024 AMG

A mechanic has completed a bonded honeycomb repair using the potted compound repair technique. What nondestructive testing method is used to determine the soundness of the repair after the repair has cured?

- A) Eddy current test.
- B) Metallic ring test.
- C) Ultrasonic test.

27. AMG098 AMG

On a fillet weld, the penetration requirement includes what percentage(s) of the base metal thickness?

- A) 100 percent.
- B) 25 to 50 percent.
- C) 60 to 80 percent.

28. AMG019 AMG

Which heat treating operation would be performed when the surface of the metal is changed chemically by introducing a high carbide or nitride content?

- A) Tempering.
- B) Normalizing.
- C) Case hardening.

29. AMG024 AMG

One way a part may be demagnetized after magnetic particle inspection is by

- A) subjecting the part to high voltage, low amperage ac.
- B) slowly moving the part out of an ac magnetic field of sufficient strength.
- C) slowly moving the part into an ac magnetic field of sufficient strength.

30. AMG024 AMG

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

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

31. AMG057 AMG

Which tool can be used to measure the alignment of a rotor shaft or the plane of rotation of a disk?

- A) Dial indicator.
- B) Shaft gauge.
- C) Protractor.

32. AMG057 AMG

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

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

33. AMG040 AMG

What must accompany fuel vaporization?

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

34. AMG040 AMG

How are aviation fuels, which possess greater antiknock qualities than 100 octane, classified?

- A) According to the milliliters of lead.
- B) By reference to normal heptane.
- C) By performance numbers.

35. AMG045 AMG

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

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

36. AMG058 AMG

The priming of a fuel injected horizontally opposed engine is accomplished by placing the fuel control lever in the

- A) IDLE CUTOFF position.
- B) AUTO RICH position.
- C) FULL RICH position.

37. AMG045 AMG

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

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

38. AMG094 AMG

How is a flooded engine, equipped with a float type carburetor, cleared of excessive fuel?

- A) Crank the engine with the starter or by hand, with the mixture control in cutoff, ignition switch off, and the throttle fully open, until the fuel charge has been cleared.
- B) Turn off the fuel and the ignition. Discontinue the starting attempt until the excess fuel has cleared.
- C) Crank the engine with the starter or by hand, with the mixture control in cutoff, ignition switch on, and the throttle fully open, until the excess fuel has cleared or until the engine starts.

39. AMG045 AMG

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

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

40. AMG095 AMG

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

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

41. AMG009 AMG

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

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

42. AMG012 AMG

Spilled mercury on aluminum

- A) greatly increases susceptibility to hydrogen embrittlement.
- B) may cause impaired corrosion resistance if left in prolonged contact.
- C) causes rapid and severe corrosion that is very difficult to control.

43. AMG012 AMG

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

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

44. AMG044 AMG

A four cylinder aircraft engine has a cylinder bore of 3.78 inches and is 8.5 inches deep. With the piston on bottom center, the top of the piston measures 4.0 inches from the bottom of the cylinder. What is the approximate piston displacement of this

engine?

- A) 200 cubic inches.
- B) 360 cubic inches.
- C) 235 cubic inches.

45. AMG055 AMG

What force is exerted on the piston in a hydraulic cylinder if the area of the piston is 1.2 square inches and the fluid pressure is 850 PSI?

- A) 1,020 pounds.
- B) 960 pounds.
- C) 850 pounds.

46. AMG044 AMG

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

(Note: $C = \pi \times D$)

- A) 20 inches x 25-5/32 inches.
- B) 20 inches x 24-9/64 inches.
- C) 20 inches x 25-9/64 inches.

47. AMG044 AMG

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

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

48. AMG053 AMG

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

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

49. AMG053 AMG

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

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

50. AMG028 AMG

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

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

51. AMG082 AMG

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

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

52. AMG023 AMG

An FAA Form 337 is used to record and document

- A) preventive and unscheduled maintenance, and special inspections.
- B) major and minor repairs, and major and minor alterations.
- C) major repairs and major alterations.

53. AMG076 AMG

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

- 1. FAA Form 337's must be completed.
 - 2. Entries must be made in the aircraft's maintenance record.
 - 3. The owner of the aircraft must submit a record of all minor repairs to the FAA at least annually.
- A) 1 and 2.
 - B) 2.
 - C) 2 and 3.

54. AMG086 AMG

When approving for return to service after maintenance or alteration, the approving person must enter in the maintenance record of the aircraft

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

55. AMG022 AMG

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

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

56. AMG099 AMG

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

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

57. AMG027 AMG

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

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

58. AMG007 AMG

A wing with a very high aspect ratio (in comparison with a low aspect ratio wing) will have

- A) increased drag at high angles of attack.
- B) a low stall speed.

C) poor control qualities at low airspeeds.

59. AMG007 AMG

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

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

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

60. AMG008 AMG

Which will weigh the least?

- A) 98 parts of dry air and 2 parts of water vapor.
- B) 35 parts of dry air and 65 parts of water vapor.
- C) 50 parts of dry air and 50 parts of water vapor.

61. AMG099 AMG

How much work input is required to lower (not drop) a 120-pound weight from the top of a 3-foot table to the floor?

- A) 120 pounds of force.
- B) 360 foot-pounds.
- C) 40 foot-pounds.

62. AMG048 AMG

What is the maintenance recording responsibility of the person who complies with an Airworthiness Directive?

- A) Advise the aircraft owner/operator of the work performed.
- B) Make an entry in the maintenance record of that equipment.
- C) Advise the FAA district office of the work performed, by submitting an FAA Form 337.

63. AMG026 AMG

The Air Transport Association of America (ATA) Specification No. 100

- (1) establishes a standard for the presentation of technical data in maintenance manuals.
- (2) divides the aircraft into numbered systems and subsystems in order to simplify locating maintenance instructions.

Regarding the above statements,

- A) both No. 1 and No. 2 are true.
- B) neither No. 1 nor No. 2 is true.
- C) only No. 1 is true.

64. AMG054 AMG

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

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

65. AMG014 AMG

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

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

C) Both.

66. AMG004 AMG

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

- A) -101.
- B) -102.
- C) Both.

67. AMG013 AMG

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

- A) 2.
- B) 3.
- C) 4.

68. AMG021 AMG

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

- A) Aircraft Listing.
- B) Summary of Discontinued Aircraft Specifications.
- C) FAA Statistical Handbook of Civil Aircraft Specifications.

69. AMG097 AMG

Where are technical descriptions of certificated propellers found?

- A) Applicable Airworthiness Directives.
- B) Aircraft Specifications.
- C) Propeller Type Certificate Data Sheets.

70. AMG051 AMG

The following is a table of airspeed limits as given in an FAA issued aircraft specification:

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

The high end of the white arc on the airspeed instrument would be at

- A) 260 knots.
- B) 293 knots.
- C) 139 knots.

71. AMG079 AMG

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

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

72. AMG067 AMG

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

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

73.

AMG063

AMG

Who is responsible for determining that materials used in aircraft maintenance and repair are of the proper type and conform to the appropriate standards?

- A) The installing person or agency.
- B) The owner or operator of the aircraft.
- C) The manufacturer of the aircraft.