

06/25/2009

Bank: (Aviation Mechanic Powerplant)
Airman Knowledge Test Question Bank

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. Use the following URL to download a complete list of associated supplement books: http://www.faa.gov/training_testing/testing/airmen/test_questions/

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. AMP042 AMP

Which fuel/air mixture will result in the highest engine temperature (all other factors remaining constant)?

- A) A mixture leaner than a rich best power mixture of .085.
- B) A mixture richer than a full rich mixture of .087.
- C) A mixture leaner than a manual lean mixture of .060.

2. AMP008 AMP

A characteristic of dyna focal engine mounts as applied to aircraft reciprocating engines is that the

- A) shock mounts eliminate the torsional flexing of the powerplant.
- B) engine attaches to the shock mounts at the engine's center of gravity.
- C) shock mounts point toward the engine's center of gravity.

3. AMP057 AMP

What is the purpose of a power check on a reciprocating engine?

- A) To check magneto drop.
- B) To determine satisfactory performance.
- C) To determine if the fuel/air mixture is adequate.

4. AMP056 AMP

The horsepower developed in the cylinders of a reciprocating engine is known as the

- A) shaft horsepower.
- B) indicated horsepower.
- C) brake horsepower.

5. AMP056 AMP

Engine operating flexibility is the ability of the engine to

- A) deliver maximum horsepower at a specific altitude.
- B) meet exacting requirements of efficiency and low weight per horsepower ratio.
- C) run smoothly and give the desired performance at all speeds.

6. AMP056 AMP

If the oil pressure of a cold engine is higher than at normal operating temperatures, the

- A) oil system relief valve should be readjusted.
- B) engine's lubrication system is probably operating normally.
- C) oil dilution system should be turned on immediately.

7. AMP056 AMP

Engine crankshaft runout is usually checked

- 1. during engine overhaul.
- 2. during annual inspection.
- 3. after a 'prop strike' or sudden engine stoppage.
- 4. during 100-hour inspection.

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

8. AMP057 AMP

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

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

9. AMP056 AMP

If an engine cylinder is to be removed, at what position in the cylinder should the piston be?

- A) Bottom dead center.
- B) Top dead center.
- C) Halfway between top and bottom dead center.

10. AMP063 AMP

If the ignition switch is moved from BOTH to either LEFT or RIGHT during an engine ground check, normal operation is usually indicated by a

- A) large drop in RPM.
- B) momentary interruption of both ignition systems.
- C) slight drop in RPM.

11. AMP031 AMP

If the oil pressure gauge fluctuates over a wide range from zero to normal operating pressure, the most likely cause is

- A) low oil supply.
- B) broken or weak pressure relief valve spring.
- C) air lock in the scavenge pump intake.

12. AMP056 AMP

After spark plugs from an opposed engine have been serviced, in what position should they be reinstalled?

- A) Next in firing order to the one from which they were removed.
- B) Swapped bottom to top.
- C) Next in firing order to the one from which they were removed and swapped bottom to top.

13. AMP056 AMP

What does valve overlap promote?

- A) Lower intake manifold pressure and temperatures.
- B) A backflow of gases across the cylinder.
- C) Better scavenging and cooling characteristics.

14. AMP056 AMP

When does valve overlap occur in the operation of an aircraft reciprocating engine?

- A) At the end of the exhaust stroke and the beginning of the intake stroke.
- B) At the end of the power stroke and the beginning of the exhaust stroke.
- C) At the end of the compression stroke and the beginning of the power stroke.

15. AMP056 AMP

What is the best indication of worn valve guides?

- A) High oil consumption.
- B) Low compression.
- C) Low oil pressure.

16. AMP056 AMP

Which statement is true regarding bearings used in high powered reciprocating aircraft engines?

- A) The outer race of a single row, self aligning ball bearing will always have a radius equal to the radius of the balls.
- B) There is less rolling friction when ball bearings are used than when roller bearings are employed.
- C) Crankshaft bearings are generally of the ball-type due to their ability to withstand extreme loads without overheating.

17. AMP056 AMP

Which of the following is a characteristic of a thrust bearing used in most radial engines?

- A) Tapered roller.
- B) Double row ball.
- C) Deep groove ball.

18. AMP056 AMP

Which condition would be the least likely to be caused by failed or failing engine bearings?

- A) Excessive oil consumption.
- B) High oil temperatures.
- C) Low oil temperatures.

19. AMP053 AMP

What is the principal advantage of using propeller reduction gears?

- A) To enable the propeller RPM to be increased without an accompanying increase in engine RPM.
- B) To enable the engine RPM to be increased with an accompanying increase in power and allow the propeller to remain at a lower, more efficient RPM.
- C) To enable the engine RPM to be increased with an accompanying increase in propeller RPM.

20. AMP056 AMP

The five events of a four stroke cycle engine in the order of their occurrence are

- A) intake, ignition, compression, power, exhaust.
- B) intake, power, compression, ignition, exhaust.
- C) intake, compression, ignition, power, exhaust.

21. AMP057 AMP

Which of the following engine servicing operations generally requires engine pre oiling prior to starting the engine?

- A) Engine oil and filter change.
- B) Engine installation.
- C) Replacement of oil lines.

22. AMP021 AMP

Direct mechanical push pull carburetor heat control linkages should normally be adjusted so that the stop located on the diverter valve will be contacted

- A) before the stop at the control lever is reached in both HOT and COLD positions.
- B) before the stop at the control lever is reached in the HOT position and after the stop at the control lever is reached in the COLD position.
- C) after the stop at the control lever is reached in both HOT and COLD positions.

23. AMP056 AMP

Which of the following conditions would most likely lead to detonation?

- A) Late ignition timing.
- B) Use of fuel with too high an octane rating.
- C) Use of fuel with too low an octane rating.

24. AMP056 AMP

Increased water vapor (higher relative humidity) in the incoming air to a reciprocating engine will normally result in which of the following?

- A) Decreased engine power at a constant RPM and manifold pressure.
- B) Increased power output due to increased volumetric efficiency.
- C) A leaning effect on engines which use non automatic carburetors.

25. AMP053 AMP

An increase in manifold pressure with a constant RPM will cause the bearing load in an engine to

- A) decrease.
- B) remain relatively constant.
- C) increase.

26. AMP056 AMP

To what altitude will a turbo charged engine maintain sea level pressure?

- A) Critical altitude.
- B) Service ceiling.
- C) Pressure altitude.

27. AMP056 AMP

Master rod bearings are generally what type?

- A) Plain.
- B) Roller.
- C) Ball.

28. AMP056 AMP

On which part of the cylinder walls of a normally operating engine will the greatest amount of wear occur?

- A) Near the center of the cylinder where piston velocity is greatest.
- B) Near the top of the cylinder.
- C) Wear is normally evenly distributed.

29. AMP056 AMP

Some cylinder barrels are hardened by

- A) nitriding.
- B) shot peening.
- C) tempering.

30. AMP056 AMP

If an engine with a stroke of 6 inches is operated at 2,000 RPM, the piston movement within the cylinder will be

- A) at maximum velocity around TDC.
- B) constant during the entire 360° of crankshaft travel.
- C) at maximum velocity 90° after TDC.

31. AMP056 AMP

Some aircraft engine manufacturers equip their product with choked or taper-ground cylinders in order to

- A) provide a straight cylinder bore at operating temperatures.
- B) flex the rings slightly during operation and reduce the possibility of the rings sticking in the grooves.
- C) increase the compression pressure for starting purposes.

32. AMP056 AMP

Full floating piston pins are those which allow motion between the pin and

- A) the piston.
- B) both the piston and the large end of the connecting rod.
- C) both the piston and the small end of the connecting rod.

33. AMP056 AMP

When is the fuel/air mixture ignited in a conventional reciprocating engine?

- A) When the piston has reached top dead center of the intake stroke.
- B) Shortly before the piston reaches the top of the compression stroke.
- C) When the piston reaches top dead center on the compression stroke.

34. AMP049 AMP

- (1) Cast iron piston rings may be used in chrome plated cylinders.
- (2) Chrome plated rings may be used in plain steel cylinders.

Regarding the above statements,

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

35. AMP007 AMP

During overhaul, the disassembled parts of an engine are usually degreased with some form of mineral spirits solvent rather than water mixed degreasers primarily because

- A) solvent degreasers are much more effective.
- B) water mixed degreaser residues may cause engine oil contamination in the overhauled engine.
- C) water-mixed degreasers cause corrosion.

36. AMP056 AMP

The primary concern in establishing the firing order for an opposed engine is to

- A) provide for balance and eliminate vibration to the greatest extent possible.
- B) keep power impulses on adjacent cylinders as far apart as possible in order to obtain the greatest mechanical efficiency.
- C) keep the power impulses on adjacent cylinders as close as possible in order to obtain the greatest mechanical efficiency.

37. AMP056 AMP

Compression ratio is the ratio between the

- A) piston travel on the compression stroke and on the intake stroke.
- B) combustion chamber pressure on the combustion stroke and on the exhaust stroke.
- C) cylinder volume with piston at bottom dead center and at top dead center.

38. AMP056 AMP

Grinding the valves of a reciprocating engine to a feather edge is likely to result in

- A) normal operation and long life.
- B) excessive valve clearance.
- C) preignition and burned valves.

39. AMP068 AMP

The diffuser section of a jet engine is located between

- A) the burner section and the turbine section.

- B) station No. 7 and station No. 8.
- C) the compressor section and the burner section.

40. AMP012 AMP

Using standard atmospheric conditions, the standard sea level temperature is

- A) 59 °F.
- B) 59 °C.
- C) 29 °C.

41. AMP019 AMP

How does a dual axial flow compressor improve the efficiency of a turbojet engine?

- A) More turbine wheels can be used.
- B) Higher compression ratios can be obtained.
- C) The velocity of the air entering the combustion chamber is increased.

42. AMP019 AMP

An advantage of the axial flow compressor is its

- A) low starting power requirements.
- B) low weight.
- C) high peak efficiency.

43. AMP019 AMP

What is the primary factor which controls the pressure ratio of an axial flow compressor?

- A) Number of stages in compressor.
- B) Compressor inlet pressure.
- C) Compressor inlet temperature.

44. AMP008 AMP

The air passing through the combustion chamber of a turbine engine is

- A) used to support combustion and to cool the engine.
- B) entirely combined with fuel and burned.
- C) speeded up and heated by the action of the turbines.

45. AMP041 AMP

At what stage in a turbine engine are gas pressures the greatest?

- A) Compressor inlet.
- B) Turbine outlet.
- C) Compressor outlet.

46. AMP019 AMP

What is the primary advantage of an axial flow compressor over a centrifugal compressor?

- A) High frontal area.
- B) Less expensive.
- C) Greater pressure ratio.

47. AMP019 AMP

Which two elements make up the axial flow compressor assembly?

- A) Rotor and stator.
- B) Compressor and manifold.
- C) Stator and diffuser.

48. AMP068 AMP

Between each row of rotating blades in a turbine engine compressor, there is a row of stationary blades which act to diffuse the air. These stationary blades are called

- A) buckets.
- B) rotors.
- C) stators.

49. AMP068 AMP

Where do stress rupture cracks usually appear on turbine blades?

- A) Across the blade root, parallel to the fir tree.
- B) Along the leading edge, parallel to the edge.
- C) Across the leading or trailing edge at a right angle to the edge length.

50. AMP069 AMP

The blending of blades and vanes in a turbine engine

- A) is usually accomplished only at engine overhaul.
- B) should be performed parallel to the length of the blade using smooth contours to minimize stress points.
- C) may sometimes be accomplished with the engine installed, ordinarily using power tools.

51. AMP027 AMP

A cool-off period prior to shutdown of a turbine engine is accomplished in order to

- A) allow the turbine wheel to cool before the case contracts around it.
- B) prevent vapor lock in the fuel control and/or fuel lines.
- C) prevent seizure of the engine bearings.

52. AMP008 AMP

Hot spots in the combustion section of a turbojet engine are possible indicators of

- A) faulty igniter plugs.
- B) dirty compressor blades.
- C) malfunctioning fuel nozzles.

53. AMP068 AMP

Which of the following engine variables is the most critical during turbine engine operation?

- A) Compressor inlet air temperature.
- B) Compressor RPM.
- C) Turbine inlet temperature.

54. AMP068 AMP

What type of turbine blade is most commonly used in aircraft jet engines?

- A) Reaction.
- B) Impulse.
- C) Impulse-reaction.

55. AMP068 AMP

Which of the following is the ultimate limiting factor of turbine engine operation?

- A) Compressor inlet air temperature.
- B) Turbine inlet temperature.
- C) Burner can pressure.

56. AMP068 AMP

When aircraft turbine blades are subjected to excessive heat stress, what type of failures would you expect?

- A) Bending and torsion.
- B) Torsion and tension.
- C) Stress rupture.

57. AMP068 AMP

Dirt particles in the air being introduced into the compressor of a turbine engine will form a coating on all but which of the following?

- A) Turbine blades.
- B) Casings.
- C) Inlet guide vanes.

58. AMP068 AMP

When starting a turbine engine, a hung start is indicated if the engine

- A) exhaust gas temperature exceeds specified limits.
- B) fails to reach idle RPM.
- C) RPM exceeds specified operating speed.

59. AMP020 AMP

Newton's First Law of Motion, generally termed the Law of Inertia, states:

- 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.

60. AMP068 AMP

The Brayton cycle is known as the constant

- A) pressure cycle.
- B) temperature cycle.
- C) mass cycle.

61. AMP068 AMP

The velocity of subsonic air as it flows through a convergent nozzle

- A) increases.
- B) decreases.
- C) remains constant.

62. AMP008 AMP

The turbine section of a jet engine

- A) increases air velocity to generate thrust forces.
- B) utilizes heat energy to expand and accelerate the incoming gas flow.
- C) drives the compressor section.

63. AMP069 AMP

The abbreviation Pt7 used in turbine engine terminology means

- A) the total inlet pressure.
- B) pressure and temperature at station No. 7.
- C) the total pressure at station No. 7.

64. AMP068 AMP

The function of the exhaust cone assembly of a turbine engine is to

- A) collect the exhaust gases and act as a noise suppressor.
- B) swirl and collect the exhaust gases into a single exhaust jet.
- C) straighten and collect the exhaust gases into a solid exhaust jet.

65. AMP042 AMP

What must be done after the fuel control unit has been replaced on an aircraft gas turbine engine?

- A) Perform a full power engine run to check fuel flow.
- B) Recalibrate the fuel nozzles.
- C) Retrim the engine.

66. AMP004 AMP

During inspection, turbine engine components exposed to high temperatures may only be marked with such materials as allowed by the manufacturer. These materials generally include

1. layout dye.
2. commercial felt tip marker.
3. wax or grease pencil.
4. chalk.
5. graphite lead pencil.

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

67. AMP068 AMP

Main bearing oil seals used with turbine engines are usually what type(s)?

- A) Labyrinth and/or carbon rubbing.
- B) Teflon and synthetic rubber.
- C) Labyrinth and/or silicone rubber.

68. AMP068 AMP

Who establishes the recommended operating time between overhauls (TBO) of a turbine engine used in general aviation?

- A) The engine manufacturer.
- B) The operator (utilizing manufacturer data and trend analysis) working in conjunction with the FAA.
- C) The FAA.

69. AMP068 AMP

Which statement is true regarding jet engines?

- A) At the lower engine speeds, thrust increases rapidly with small increases in RPM.
- B) At the higher engine speeds, thrust increases rapidly with small increases in RPM.
- C) The thrust delivered per pound of air consumed is less at high altitude than at low altitude.

70. AMP068 AMP

One function of the nozzle diaphragm in a turbine engine is to

- A) decrease the velocity of exhaust gases.
- B) center the fuel spray in the combustion chamber.
- C) direct the flow of gases to strike the turbine blades at the desired angle.

71. AMP068 AMP

What is the major function of the turbine assembly in a turbojet engine?

- A) Directs the gases in the proper direction to the tailpipe.
- B) Supplies the power to turn the compressor.
- C) Increases the temperature of the exhaust gases.

72. AMP068 AMP

- (1) Welding and straightening of turbine engine rotating airfoils does not require special equipment.
- (2) Welding and straightening of turbine engine rotating airfoils is commonly recommended by the manufacturer.

Regarding the above statements,

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

73. AMP008 AMP

Straightening nitrided crankshafts is

- A) recommended.
- B) not recommended.
- C) approved by the manufacturer.

74. AMP045 AMP

Select the Airworthiness Directive applicability statement which applies to an IVO 355 engine, serial number T8164, with 2,100 hours' total time and 300 hours since rebuilding.

- A) Applies to all IVO 355 engines, serial numbers T8000 through T8300, having less than 2,400 hours' total time.
- B) Applies to all IVO 355 engines, serial numbers T8000 through T8900 with 2,400 hours or more total time.

C) Applies to all I.O. and TV10-355 engines, all serial numbers regardless of total time or since overhaul.

75. AMP045 AMP

(Refer to Powerplant figure 1.) Determine which portion of the AD is applicable for Model O-690 series engine, serial No. 5863-40 with 283 hours` time in service.

- A) (B), (1).
- B) (A).
- C) (B), (2).

76. AMP007 AMP

What section in the instructions for continued airworthiness is FAA approved?

- A) Engine maintenance manual or section.
- B) Engine overhaul manual or section.
- C) Airworthiness limitations section.

77. AMP007 AMP

Which of the following can inspect and approve an engine major repair for return to service?

- A) Certificated mechanic with airframe and powerplant ratings.
- B) Certificated mechanic with a powerplant rating.
- C) Certificated mechanic with inspection authorization.

78. AMP007 AMP

You are performing a 100-hour inspection on an R985-22 aircraft engine. What does the '985' indicate?

- A) The total piston displacement of the engine.
- B) The pistons will pump a maximum of 985 cubic inches of air per crankshaft revolution.
- C) The total piston displacement of one cylinder.

79. AMP044 AMP

Which of the following contains a minimum checklist for 100-hour inspections of engines?

- A) 14 CFR Part 33 Appendix A.
- B) 14 CFR Part 43 Appendix D.
- C) Engine Specifications or Type Certificate Data Sheets.

80. AMP058 AMP

What maintenance record(s) is/are required following a major repair of an aircraft engine?

- A) Entries in engine maintenance records and a list of discrepancies for the FAA.
- B) Entries in the engine maintenance record and FAA Form 337.

C) Entry in logbook.

81. AMP072 AMP

Which of the following contains a table that lists the engines to which a given propeller is adaptable?

- A) Aircraft Type Certificate Data Sheets.
- B) Propeller Type Certificate Data Sheets.
- C) Engine Type Certificate Data Sheets.

82. AMP012 AMP

A Bourdon tube instrument may be used to indicate

- 1. pressure.
 - 2. temperature.
 - 3. position.
 - 4. quantity.
- A) 1 and 2.
 - B) 1 and 3.
 - C) 2 and 4.

83. AMP008 AMP

Which of the following is a primary engine instrument?

- A) Tachometer.
- B) Fuel flowmeter.
- C) Airspeed indicator.

84. AMP008 AMP

Basically, the indicator of a tachometer system is responsive to change in

- A) current flow.
- B) frequency.
- C) voltage.

85. AMP009 AMP

Thermocouple leads

- A) may be installed with either lead to either post of the indicator.
- B) are designed for a specific installation and may not be altered.
- C) may be repaired using solderless connectors.

86. AMP016 AMP

On an aircraft turbine engine, operating at a constant power, the application of engine anti-icing will result in

- A) noticeable shift in EPR.
- B) a false EPR reading.
- C) an increase in EPR.

87. AMP009 AMP

In what units are turbine engine tachometers calibrated?

- A) Percent of engine RPM.
- B) Actual engine RPM.
- C) Percent of engine pressure ratio.

88. AMP066 AMP

Which statement is true regarding a thermocouple type cylinder head temperature measuring system?

- A) The resistance required for cylinder head temperature indicators is measured in farads.
- B) The voltage output of a thermocouple system is determined by the temperature difference between the two ends of the thermocouple.
- C) When the master switch is turned on, a thermocouple indicator will move off scale to the low side.

89. AMP008 AMP

An indication of unregulated power changes that result in continual drift of manifold pressure indication on a turbosuper-charged aircraft engine is known as

- A) Overshoot.
- B) Waste gate fluctuation.
- C) Bootstrapping.

90. AMP059 AMP

Which of the following instrument discrepancies require replacement of the instrument?

1. Red line missing from glass.
 2. Glass cracked.
 3. Case paint chipped.
 4. Will not zero out.
 5. Pointer loose on shaft.
 6. Mounting screw loose.
 7. Leaking at line B nut.
 8. Fogged.
- A) 2, 3, 7, 8.

B) 2, 4, 5, 8.

C) 1, 2, 4, 7.

91. AMP068 AMP

What would be the possible cause if a gas turbine engine has high exhaust gas temperature, high fuel flow, and low RPM at all engine power settings?

- A) Fuel control out of adjustment.
- B) Loose or corroded thermocouple probes for the EGT indicator.
- C) Turbine damage or loss of turbine efficiency.

92. AMP029 AMP

In regard to using a turbine engine oil analysis program, which of the following is NOT true?

- A) Generally, an accurate trend forecast may be made after an engine's first oil sample analysis.
- B) It is best to start an oil analysis program on an engine when it is new.
- C) A successful oil analysis program should be run over an engine's total operating life so that normal trends can be established.

93. AMP066 AMP

If the thermocouple leads were inadvertently crossed at installation, what would the cylinder temperature gauge pointer indicate?

- A) Normal temperature for prevailing condition.
- B) Moves off scale on the zero side of the meter.
- C) Moves off scale on the high side of the meter.

94. AMP026 AMP

Motor driven impeller and turbine fuel flow transmitters are designed to transmit data

- A) using aircraft electrical system power.
- B) mechanically.
- C) by fuel pressure.

95. AMP041 AMP

The fuel flowmeter used with a continuous-fuel injection system installed on an aircraft horizontally opposed reciprocating engines measures the fuel pressure drop across the

- A) manifold valve.
- B) fuel nozzles.
- C) metering valve.

96. AMP036 AMP

(Refer to Powerplant figure 2.) Determine the fire extinguisher container pressure limits when the temperature is 75 °F.

- A) 326 minimum and 415 maximum.
- B) 330 minimum and 419 maximum.
- C) 338 minimum and 424 maximum.

97. AMP034 AMP

How are most aircraft turbine engine fire extinguishing systems activated?

- A) Electrically discharged cartridges.
- B) Manual remote control valve.
- C) Pushrod assembly.

98. AMP036 AMP

The most satisfactory extinguishing agent for a carburetor or intake fire is

- A) carbon dioxide.
- B) dry chemical.
- C) methyl bromide.

99. AMP036 AMP

The pulling out (or down) of an illuminated fire handle in a typical large jet aircraft fire protection system commonly accomplishes what events?

- A) Closes all firewall shutoff valves, disconnects the generator, and discharges a fire bottle.
- B) Closes fuel shutoff, closes hydraulic shutoff, disconnects the generator field, and arms the fire extinguishing system.
- C) Closes fuel shutoff, closes hydraulic shutoff, closes the oxygen shutoff, disconnects the generator field, and arms the fire-extinguishing system.

100. AMP034 AMP

Why does one type of Fenwal fire detection system use spot detectors wired in parallel between two separate circuits?

- A) To provide an installation that is equal to two separate systems, a primary system and a secondary, or back-up system.
- B) So that a double fault may exist in the system without sounding a false alarm.
- C) So that a single fault may exist in the system without sounding a false alarm.

101. AMP010 AMP

A fuel or oil fire is defined as a

- A) class B fire.
- B) class A fire.

C) class C fire.

102. AMP034 AMP

What is the function of a fire detection system?

- A) To discharge the powerplant fire extinguishing system at the origin of the fire.
- B) To activate a warning device in the event of a powerplant fire.
- C) To identify the location of a powerplant fire.

103. AMP036 AMP

What retains the nitrogen charge and fire extinguishing agent in a high rate of discharge (HRD) container?

- A) Breakable disk and fusible disk.
- B) Pressure switch and check tee valve.
- C) Pressure gauge and cartridge.

104. AMP036 AMP

In a fixed fire-extinguishing system, there are two small lines running from the system and exiting overboard. These line exit ports are covered with a blowout type indicator disc. Which of the following statements is true?

- A) When the red indicator disc is missing, it indicates the fire extinguishing system has been normally discharged.
- B) When the yellow indicator disc is missing, it indicates the fire extinguishing system has been normally discharged.
- C) When the green indicator disc is missing, it indicates the fire extinguishing system has had a thermal discharge.

105. AMP036 AMP

The explosive cartridge in the discharge valve of a fire extinguisher container is

- A) a life dated unit.
- B) not a life dated unit.
- C) mechanically fired.

106. AMP034 AMP

After a fire is extinguished, or overheat condition removed in aircraft equipped with a Systron-Donner fire detector, the detection system

- A) must be manually reset.
- B) automatically resets.
- C) sensing component must be replaced.

107. AMP026 AMP

(Refer to Powerplant figure 4.) In a 28-volt system, what is the maximum continuous current that can be carried by a single No. 10 copper wire 25 feet long, routed in free air?

- A) 20 amperes.
- B) 35 amperes.
- C) 28 amperes.

108. AMP006 AMP

What is the maximum number of bonding jumper wires that may be attached to one terminal grounded to a flat surface?

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

109. AMP044 AMP

Which of the following is regulated in a generator to control its voltage output?

- A) Speed of the armature.
- B) Number of windings in the armature.
- C) The strength of the field.

110. AMP006 AMP

(1) Electrical circuit protection devices are rated based on the amount of current that can be carried without overheating the wiring insulation.

(2) A 'trip free' circuit breaker makes it impossible to manually hold the circuit closed when excessive current is flowing.

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.

111. AMP026 AMP

What is the smallest terminal stud allowed for aircraft electrical power systems?

- A) No. 6.
- B) No. 8.
- C) No. 10.

112. AMP026 AMP

A term commonly used when two or more electrical terminals are installed on a single lug of a terminal strip is

- A) strapping.
- B) stepping.
- C) stacking.

113. AMP026 AMP

Aircraft copper electrical wire is coated with tin, silver, or nickel in order to

- A) improve conductivity.
- B) add strength.
- C) prevent oxidization.

114. AMP026 AMP

When installing electrical wiring parallel to a fuel line, the wiring should be

- A) in metal conduit.
- B) in a non-conductive fire-resistant sleeve.
- C) above the fuel line.

115. AMP026 AMP

What type of lubricant may be used to aid in pulling electrical wires or cables through conduits?

- A) Silicone grease.
- B) Soapstone talc.
- C) Rubber lubricant.

116. AMP044 AMP

The maximum allowable voltage drop between the generator and the bus bar is

- A) 1 percent of the regulated voltage.
- B) 2 percent of the regulated voltage.
- C) less than the voltage drop permitted between the battery and the bus bar.

117. AMP026 AMP

Aircraft electrical wire size is measured according to the

- A) Military Specification system.
- B) American Wire Gauge system.
- C) Technical Standard Order system.

118. AMP006 AMP

As a general rule, starter brushes are replaced when they are approximately

- A) one half their original length.
- B) one-third their original length.

C) two-thirds their original length.

119. AMP068 AMP

When the starter switch to the aircraft gas turbine engine starter-generator is energized and the engine fails to rotate, one of the probable causes would be the

- A) power lever switch is defective.
- B) undercurrent solenoid contacts are defective.
- C) starter solenoid is defective.

120. AMP001 AMP

Alternators (ac generators) that are driven by a constant-speed drive (CSD) mechanism are used to regulate the alternator to a constant

- A) voltage output.
- B) amperage output.
- C) hertz output.

121. AMP026 AMP

Electric motors are often classified according to the method of connecting the field coils and armature. Aircraft engine starter motors are generally of which type?

- A) Compound.
- B) Series.
- C) Shunt (parallel).

122. AMP026 AMP

If the points in a vibrator type voltage regulator stick in the closed position while the generator is operating, what will be the probable result?

- A) Generator output voltage will decrease.
- B) Generator output voltage will not be affected.
- C) Generator output voltage will increase.

123. AMP044 AMP

What device is used to convert alternating current, which has been induced into the loops of the rotating armature of a dc generator, to direct current?

- A) A rectifier.
- B) A commutator.
- C) An inverter.

124. AMP026 AMP

What is the frequency of most aircraft alternating current?

- A) 115 Hertz.
- B) 60 Hertz.
- C) 400 Hertz.

125. AMP026 AMP

What is a basic advantage of using ac for electrical power for a large aircraft?

- A) AC systems operate at higher voltage than dc systems and therefore use less current and can use smaller and lighter weight wiring.
- B) AC systems operate at lower voltage than dc systems and therefore use less current and can use smaller and lighter weight wiring.
- C) AC systems operate at higher voltage than dc systems and therefore use more current and can use smaller and lighter weight wiring.

126. AMP001 AMP

Why is it unnecessary to flash the field of the exciter on a brushless alternator?

- A) The exciter is constantly charged by battery voltage.
- B) Brushless alternators do not have exciters.
- C) Permanent magnets are installed in the main field poles.

127. AMP029 AMP

In addition to lubricating (reducing friction between moving parts), engine oil performs what functions?

- 1. Cools.
 - 2. Seals.
 - 3. Cleans.
 - 4. Prevents corrosion.
 - 5. Cushions impact (shock) loads.
- A) 1, 2, 3, 4.
 - B) 1, 2, 3, 4, 5.
 - C) 1, 3, 4.

128. AMP029 AMP

High tooth pressures and high rubbing velocities, such as occur with spur type gears, require the use of

- A) an EP lubricant.
- B) straight mineral oil.
- C) metallic ash detergent oil.

129. AMP030 AMP

What type of oil do most engine manufacturers recommend for new reciprocating engine break in?

- A) Ashless dispersant oil.
- B) Straight mineral oil.
- C) Semi synthetic oil.

130. AMP030 AMP

As an aid to cold weather starting, the oil dilution system thins the oil with

- A) kerosene.
- B) alcohol.
- C) gasoline.

131. AMP030 AMP

Which type valve prevents oil from entering the main accessory case when the engine is not running?

- A) Bypass.
- B) Relief.
- C) Check.

132. AMP011 AMP

Oil accumulation in the cylinders of an inverted in line engine and in the lower cylinders of a radial engine is normally reduced or prevented by

- A) reversed oil control rings.
- B) routing the valve operating mechanism lubricating oil to a separate scavenger pump.
- C) extended cylinder skirts.

133. AMP056 AMP

The purpose of the flow control valve in a reciprocating engine oil system is to

- A) direct oil through or around the oil cooler.
- B) deliver cold oil to the hopper tank.
- C) compensate for volumetric increases due to foaming of the oil.

134. AMP069 AMP

As a general rule, a small amount of small fuzzy particles or gray metallic paste on a turbine engine magnetic chip detector

- A) is considered to be the result of normal wear.
- B) indicates an imminent component failure.
- C) indicates accelerated generalized wear.

135. AMP030 AMP

How are the teeth of the gears in the accessory section of an engine normally lubricated?

- A) By splashed or sprayed oil.
- B) By submerging the load bearing portions in oil.
- C) By surrounding the load bearing portions with baffles or housings within which oil pressure can be maintained.

136. AMP049 AMP

How is the oil collected by the piston oil ring returned to the crankcase?

- A) Down vertical slots cut in the piston wall between the piston oil ring groove and the piston skirt.
- B) Through holes drilled in the piston oil ring groove.
- C) Through holes drilled in the piston pin recess.

137. AMP030 AMP

If a full flow oil filter is used on an aircraft engine, and the filter becomes completely clogged, the

- A) oil supply to the engine will be blocked.
- B) oil will be bypassed back to the oil tank hopper where larger sediments and foreign matter will settle out prior to passage through the engine.
- C) bypass valve will open and the oil pump will supply unfiltered oil to the engine.

138. AMP030 AMP

What will result if an oil filter becomes completely blocked?

- A) Oil will flow at a reduced rate through the system.
- B) Oil flow to the engine will stop.
- C) Oil will flow at the normal rate through the system.

139. AMP030 AMP

What prevents pressure within the lubricating oil tank from rising above or falling below ambient pressure (reciprocating engine)?

- A) Oil tank check valve.
- B) Oil pressure relief valve.
- C) Oil tank vent.

140. AMP068 AMP

What is the purpose of the last chance oil filters?

- A) To prevent damage to the oil spray nozzle.
- B) To filter the oil immediately before it enters the main bearings.
- C) To assure a clean supply of oil to the lubrication system.

141. AMP040 AMP

What is the primary purpose of the oil to fuel heat exchanger?

- A) Cool the fuel.
- B) Cool the oil.
- C) De aerate the oil.

142. AMP068 AMP

The type of oil pumps most commonly used on turbine engines are classified as

- A) positive displacement.
- B) variable displacement.
- C) constant speed.

143. AMP068 AMP

Oil picks up the most heat from which of the following turbine engine components?

- A) Rotor coupling.
- B) Compressor bearing.
- C) Turbine bearing.

144. AMP031 AMP

Low oil pressure can be detrimental to the internal engine components. However, high oil pressure

- A) should be limited to the engine manufacturer's recommendations.
- B) has a negligible effect.
- C) will not occur because of pressure losses around the bearings.

145. AMP069 AMP

Possible failure related ferrous metal particles in turbine engine oil cause an (electrical) indicating type magnetic chip detector to indicate their presence by

- A) disturbing the magnetic lines of flux around the detector tip.
- B) bridging the gap between the detector center (positive) electrode and the ground electrode.
- C) generating a small electric current that is caused by the particles being in contact with the dissimilar metal of the detector tip.

146. AMP064 AMP

What is the relationship between distributor and crankshaft speed of aircraft reciprocating engines?

- A) The distributor turns at one half crankshaft speed.
- B) The distributor turns at one and one half crankshaft speed.
- C) The crankshaft turns at one half distributor speed.

147. AMP068 AMP

The type of ignition system used on most turbine aircraft engines is

- A) high resistance.
- B) low tension.
- C) capacitor discharge.

148. AMP063 AMP

Sharp bends should be avoided in ignition leads primarily because

- A) weak points may develop in the insulation through which high tension current can leak.
- B) ignition lead wire conductor material is brittle and may break.
- C) ignition lead shielding effectiveness will be reduced.

149. AMP056 AMP

Which of the following would be cause for rejection of a spark plug?

- A) Carbon fouling of the electrode and insulator.
- B) Insulator tip cracked.
- C) Lead fouling of the electrode and insulator.

150. AMP047 AMP

When a magneto is operating, what is the probable cause for a shift in internal timing

- A) The rotating magnet loses its magnetism.
- B) The distributor gear teeth are wearing on the rotor gear teeth.
- C) The cam follower wear and/or the breaker points wear.

151. AMP007 AMP

Upon inspection of the spark plugs in an aircraft engine, the plugs were found caked with a heavy black soot. This indicates

- A) worn oil seal rings.
- B) a rich mixture.
- C) a lean mixture.

152. AMP063 AMP

When removing a shielded spark plug, which of the following is most likely to be damaged?

- A) Center electrode.
- B) Shell section.
- C) Core insulator.

153. AMP064 AMP

A spark plug's heat range is the result of

- A) the area of the plug exposed to the cooling airstream.
- B) its ability to transfer heat from the firing end of the spark plug to the cylinder head.
- C) the heat intensity of the spark.

154. AMP064 AMP

Spark plugs are considered worn out when the

- A) electrodes have worn away to about one-half of their original dimensions.
- B) center electrode edges have become rounded.
- C) electrodes have worn away to about two-thirds of their original dimensions.

155. AMP068 AMP

Igniter plugs used in turbine engines are subjected to high intensity spark discharges and yet they have a long service life because they

- A) operate at much lower temperatures.
- B) are not placed directly into the combustion chamber.
- C) do not require continuous operation.

156. AMP064 AMP

Defective spark plugs will cause the engine to run rough at

- A) high speeds only.
- B) low speeds only.
- C) all speeds.

157. AMP064 AMP

Which of the following, obtained during magneto check at 1,700 RPM, indicates a short (grounded) circuit between the right magneto primary and the ignition switch?

- A) BOTH-1,700 RPM; R-1,625 RPM; L-1,700 RPM; OFF-1,625 RPM.
- B) BOTH-1,700 RPM; R-0 RPM; L-1,700 RPM; OFF-0 RPM.
- C) BOTH-1,700 RPM; R-0 RPM; L-1,675 RPM; OFF-0 RPM.

158. AMP063 AMP

If an aircraft ignition switch is turned off and the engine continues to run normally, the trouble is probably caused by

- A) an open ground lead in the magneto.
- B) arcing magneto breaker points.
- C) primary lead grounding.

159. AMP026 AMP

(Refer to Powerplant figure 5.) The type of system depicted is capable of operating with

- A) external power only.
- B) either battery or external power.
- C) battery power and external power simultaneously.

160. AMP068 AMP

When using an electric starter motor, current usage

- A) is highest at the start of motor rotation.
- B) remains relatively constant throughout the starting cycle.
- C) is highest just before starter cutoff (at highest RPM).

161. AMP068 AMP

When using an electric starter motor, the current flow through it

- A) remains relatively constant throughout the starting cycle.
- B) is highest at the start of motor rotation.
- C) is highest just before starter cutoff (at highest RPM.)

162. AMP064 AMP

Inspection of pneumatic starters by maintenance technicians usually includes checking the

- A) oil level and magnetic drain plug condition.
- B) stator and rotor blades for FOD.
- C) rotor alignment.

163. AMP064 AMP

A clicking sound heard at engine coast-down in a pneumatic starter incorporating a sprag clutch ratchet assembly is an indication of

- A) gear tooth and/or pawl damage.
- B) one or more broken pawl springs.
- C) the pawls re-contacting and riding on the ratchet gear.

164. AMP046 AMP

As an aircraft engine's speed is increased, the voltage induced in the primary coil of the magneto

- A) remains constant.
- B) increases.
- C) varies with the setting of the voltage regulator.

165. AMP047 AMP

What is the radial location of the two north poles of a four pole rotating magnet in a high tension magneto?

- A) 180° apart.
- B) 270° apart.
- C) 90° apart.

166. AMP064 AMP

Shielding is used on spark plug and ignition wires to

- A) protect the wires from short circuits as a result of chafing or rubbing.
- B) prevent outside electromagnetic emissions from disrupting the operation of the ignition system.
- C) prevent interference with radio reception.

167. AMP063 AMP

When will the voltage in the secondary winding of a magneto, installed on a normally operating engine, be at its highest value?

- A) Just prior to spark plug firing.
- B) Toward the latter part of the spark duration when the flame front reaches its maximum velocity.
- C) Immediately after the breaker points close.

168. AMP063 AMP

What is the electrical location of the primary capacitor in a high-tension magneto?

- A) In parallel with the breaker points.
- B) In series with the breaker points.
- C) In series with the primary and secondary winding.

169. AMP064 AMP

A defective primary capacitor in a magneto is indicated by

- A) a fine grained frosted appearance of the breaker points.
- B) burned and pitted breaker points.
- C) a weak spark.

170. AMP063 AMP

Failure of an engine to cease firing after turning the magneto switch off is an indication of

- A) an open high tension lead.
- B) an open P-lead to ground.
- C) a grounded magneto switch.

171. AMP047 AMP

When using a timing light to time a magneto to an aircraft engine, the magneto switch should be placed in the

- A) BOTH position.
- B) OFF position.
- C) LEFT or RIGHT position (either one).

172. AMP063 AMP

Capacitance afterfiring in most modern spark plugs is reduced by the use of

- A) fine wire electrodes.
- B) a built-in resistor in each plug.
- C) aluminum oxide insulation.

173. AMP041 AMP

What are the positions of the pressurization valve and the dump valve in a jet engine fuel system when the engine is shut down?

- A) Pressurization valve closed, dump valve open.
- B) Pressurization valve open, dump valve open.
- C) Pressurization valve closed, dump valve closed.

174. AMP037 AMP

The economizer system in a float type carburetor

- A) keeps the fuel/air ratio constant.
- B) functions only at cruise and idle speeds.
- C) increases the fuel/air ratio at high power settings.

175. AMP041 AMP

In turbine engines that utilize a pressurization and dump valve, the dump portion of the valve

- A) cuts off fuel flow to the engine fuel manifold and dumps the manifold fuel into the combustor to burn just before the engine shuts down.
- B) drains the engine manifold lines to prevent fuel boiling and subsequent deposits in the lines as a result of residual engine heat (at engine shutdown).
- C) dumps extra fuel into the engine in order to provide for quick engine acceleration during rapid throttle advancement.

176. AMP041 AMP

The primary purpose of the air bleed openings used with continuous flow fuel injector nozzles is to

- A) provide for automatic mixture control.
- B) lean out the mixture.
- C) aid in proper fuel vaporization.

177. AMP041 AMP

Which type of fuel control is used on most of today's turbine engines?

- A) Electromechanical.
- B) Mechanical.
- C) Hydromechanical or electronic.

178. AMP041 AMP

The density of air is very important when mixing fuel and air to obtain a correct fuel to air ratio. Which of the following weighs the most?

- A) 75 parts of dry air and 25 parts of water vapor.
- B) 100 parts of dry air.
- C) 50 parts of dry air and 50 parts of water vapor.

179. AMP056 AMP

(Refer to Powerplant figure 6.) Which curve most nearly represents an aircraft engine's fuel/air ratio throughout its operating range?

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

180. AMP041 AMP

What effect does high atmospheric humidity have on the operation of a jet engine?

- A) Decreases engine pressure ratio.
- B) Decreases compressor and turbine RPM.
- C) Has little or no effect.

181. AMP068 AMP

Under which of the following conditions will the trimming of a turbine engine be most accurate?

- A) High wind and high moisture.
- B) High moisture and low wind.
- C) No wind and low moisture.

182. AMP022 AMP

What carburetor component measures the amount of air delivered to the engine?

- A) Economizer valve.
- B) Automatic mixture control.
- C) Venturi.

183. AMP041 AMP

An aircraft carburetor is equipped with a mixture control in order to prevent the mixture from becoming too

- A) lean at high altitudes.
- B) rich at high altitudes.
- C) rich at high speeds.

184. AMP056 AMP

Why must a float type carburetor supply a rich mixture during idle?

- A) Engine operation at idle results in higher than normal volumetric efficiency.
- B) Because at idling speeds the engine may not have enough airflow around the cylinders to provide proper cooling.
- C) Because of reduced mechanical efficiency during idle.

185. AMP037 AMP

Fuel is discharged for idling speeds on a float type carburetor

- A) from the idle discharge nozzle.
- B) in the venturi.
- C) through the idle discharge air bleed.

186. AMP038 AMP

Which method is commonly used to adjust the level of a float in a float type carburetor?

- A) Lengthening or shortening the float shaft.
- B) Add or remove shims under the needle valve seat.
- C) Change the angle of the float arm pivot.

187. AMP038 AMP

If an engine is equipped with a float type carburetor and the engine runs excessively rich at full throttle, a possible cause of the trouble is a clogged

- A) main air bleed.
- B) back suction line.
- C) atmospheric vent line.

188. AMP037 AMP

What is the possible cause of an engine running rich at full throttle if it is equipped with a float type carburetor?

- A) Float level too low.
- B) Clogged main air bleed.
- C) Clogged atmospheric vent.

189. AMP037 AMP

What is a function of the idling air bleed in a float type carburetor?

- A) It provides a means for adjusting the mixture at idle speeds.
- B) It vaporizes the fuel at idling speeds.
- C) It aids in emulsifying/vaporizing the fuel at idle speeds.

190. AMP022 AMP

On a carburetor without an automatic mixture control as you ascend to altitude, the mixture will

- A) be enriched.
- B) be leaned.
- C) not be affected.

191. AMP054 AMP

A nine cylinder radial engine, using a multiple point priming system with a central spider, will prime which cylinders?

- A) One, two, three, eight, and nine.
- B) All cylinders.
- C) One, three, five, and seven.

192. AMP068 AMP

The active clearance control (ACC) portion of an EEC system aids turbine engine efficiency by

- A) adjusting stator vane position according to operating conditions and power requirements.
- B) ensuring turbine blade to engine case clearances are kept to a minimum by controlling case temperatures.
- C) automatically adjusting engine speed to maintain a desired EPR.

193. AMP068 AMP

The generally acceptable way to obtain accurate on-site temperature prior to performing engine trimming is to

- A) call the control tower to obtain field temperature.
- B) observe the reading on the aircraft Outside Air Temperature (OAT) gauge.
- C) hang a thermometer in the shade of the nose wheel-well until the temperature reading stabilizes.

194. AMP068 AMP

Generally, the practice when trimming an engine is to

- A) turn all accessory bleed air off.
- B) turn all accessory bleed air on.
- C) make adjustments (as necessary) for all engines on the same aircraft with accessory bleed air settings the same--either on or off.

195. AMP041 AMP

What are the principal advantages of the duplex fuel nozzle used in many turbine engines?

- A) Restricts the amount of fuel flow to a level where more efficient and complete burning of the fuel is achieved.
- B) Provides better atomization and uniform flow pattern.
- C) Allows a wider range of fuels and filters to be used.

196. AMP041 AMP

Kerosene is used as turbine engine fuel because

- A) kerosene has very high volatility which aids in ignition and lubrication.
- B) kerosene has more heat energy per gallon and lubricates fuel system components.
- C) kerosene does not contain any water.

197. AMP041 AMP

Where physical separation of the fuel lines from electrical wiring or conduit is impracticable, locate the fuel line

- A) below the wiring and clamp the line securely to the airframe structure.
- B) above the wiring and clamp the line securely to the airframe structure.
- C) inboard of the wiring and clamp both securely to the airframe structure.

198. AMP042 AMP

The fuel systems of aircraft certificated in the standard classification must include which of the following?

- A) An engine driven fuel pump and at least one auxiliary pump per engine.
- B) A positive means of shutting off the fuel to all engines.
- C) A reserve supply of fuel, available to the engine only after selection by the flightcrew, sufficient to operate the engines at least 30 minutes at METO power.

199. AMP023 AMP

What precaution should be taken when putting thread lubricant on a tapered pipe plug in a carburetor float bowl?

- A) Put the thread lubricant only on the first thread.
- B) Do not use thread lubricant on any carburetor fitting.
- C) Engage the first thread of the plug, then put a small amount of lubricant on the second thread and screw the plug in.

200. AMP042 AMP

Which statement is true regarding proper throttle rigging of an airplane?

- A) The throttle stop on the carburetor must be contacted before the stop in the cockpit.
- B) The stop in the cockpit must be contacted before the stop on the carburetor.
- C) The throttle control is properly adjusted when neither stop makes contact.

201. AMP041 AMP

Where is the engine fuel shutoff valve usually located?

- A) Aft of the firewall.
- B) Adjacent to the fuel pump.
- C) Downstream of the engine driven fuel pump.

202. AMP041 AMP

(Refer to Powerplant figure 7.) What is the purpose of the fuel transfer ejectors?

- A) To supply fuel under pressure to the engine driven pump.
- B) To assist in the transfer of fuel from the main tank to the boost pump sump.
- C) To transfer fuel from the boost pump sump to the wing tank.

203. AMP026 AMP

When an electric primer is used, fuel pressure is built up by the

- A) internal pump in the primer solenoid.
- B) suction at the main discharge nozzle.
- C) booster pump.

204. AMP039 AMP

The primary condition(s) that allow(s) microorganisms to grow in the fuel in aircraft fuel tanks is (are)

- A) warm temperatures and frequent fueling.
- B) the presence of water.
- C) the presence of dirt or other particulate contaminants.

205. AMP003 AMP

A method commonly used to prevent carburetor icing is to

- A) preheat the intake air.
- B) mix alcohol with the fuel.
- C) electrically heat the venturi and throttle valve.

206. AMP065 AMP

If a fire starts in the induction system during the engine starting procedure, what should the operator do?

- A) Turn off the fuel switches to stop the fuel.

B) Continue cranking the engine.

C) Turn off all switches.

207. AMP056 AMP

In addition to causing accelerated wear, dust or sand ingested by a reciprocating engine may also cause

A) silicon fouling of spark plugs.

B) sludge formation.

C) acid formation.

208. AMP070 AMP

What are the three basic regulating components of a sea level boosted turbocharger system?

1. Exhaust bypass assembly.

2. Compressor assembly.

3. Pump and bearing casing.

4. Density controller.

5. Differential pressure controller.

A) 2, 3, 4.

B) 1, 4, 5.

C) 1, 2, 3.

209. AMP069 AMP

Vortex dissipator systems are generally activated by

A) a landing gear switch.

B) a fuel pressure switch anytime an engine is operating.

C) an engine inlet airflow sensor.

210. AMP056 AMP

Boost manifold pressure is generally considered to be any manifold pressure above

A) 14.7 inches Hg.

B) 50 inches Hg.

C) 30 inches Hg.

211. AMP050 AMP

What method(s) is/are used to provide clean air to the engines of helicopters and turboprop airplanes that have particle (sand and ice) separators installed?

A) Positive and negative charged areas to attract and/or repel particulates out of the airflow.

B) Air/moisture separators, and 'washing' the air clean utilizing water droplets.

C) Sharp airflow directional change to take advantage of inertia and/or centrifugal force, and filters or engine inlet screens.

212. AMP021 AMP

Which of the following would be a factor in the failure of an engine to develop full power at takeoff?

- A) Improper adjustment of carburetor heat valve control linkage.
- B) Excessively rich setting on the idle mixture adjustment.
- C) Failure of the economizer valve to remain closed at takeoff throttle setting.

213. AMP068 AMP

The vortex dissipators installed on some turbine-powered aircraft to prevent engine FOD utilize

- A) variable inlet guide vanes (IGV) and/or variable first stage fan blades.
- B) variable geometry inlet ducts.
- C) a stream of engine bleed air blown toward the ground ahead of the engine.

214. AMP003 AMP

What part of an aircraft in flight will begin to accumulate ice before any other?

- A) Wing leading edge.
- B) Propeller spinner or dome.
- C) Carburetor.

215. AMP056 AMP

What is the position of the cowl flaps during engine starting and warmup operations under normal conditions?

- A) Full open at all times.
- B) Full closed at all times.
- C) Open for starting, closed for warmup.

216. AMP027 AMP

What is the function of a blast tube as found on aircraft engines?

- A) A means of cooling the engine by utilizing the propeller backwash.
- B) A tube used to load a cartridge starter.
- C) A device to cool an engine accessory.

217. AMP056 AMP

During ground operation of an engine, the cowl flaps should be in what position?

- A) Fully closed.
- B) Fully open.

C) Opened according to ambient conditions.

218. AMP061 AMP

Reciprocating engines used in helicopters are cooled by

- A) the downdraft from the main rotor.
- B) a fan mounted on the engine.
- C) blast tubes on either side of the engine mount.

219. AMP056 AMP

Increased engine heat will cause volumetric efficiency to

- A) remain the same.
- B) decrease.
- C) increase.

220. AMP028 AMP

A broken cooling fin on a cylinder head

- A) is cause for rejection of the head.
- B) may be filed to smooth contours if damage and/or repair limits are not exceeded.
- C) should be left alone.

221. AMP056 AMP

Which of the following defects would likely cause a hot spot on a reciprocating engine cylinder?

- A) Too much cooling fin area broken off.
- B) A cracked cylinder baffle.
- C) Cowling air seal leakage.

222. AMP056 AMP

The primary purpose of baffles and deflectors installed around cylinders of air-cooled aircraft engines is to

- A) create a low pressure area aft of the cylinders.
- B) force cooling air into close contact with all parts of the cylinders.
- C) increase the volume of air used to cool the engine.

223. AMP024 AMP

Which of the following should a mechanic consult to determine the maximum amount of cylinder cooling fin that could be removed when cracks are found?

- A) AC 43.13-1A.
- B) Engine manufacturer's service or overhaul manual.

C) Engine structure repair manual.

224. AMP028 AMP

Generally, a small crack just started in a cylinder baffle

- A) requires repair by reinforcing, such as installation of a doubler over the area.
- B) requires no action unless it grows or is branched into two cracks.
- C) may be stop drilled.

225. AMP070 AMP

Compared to normally aspirated engines, turbocharged engine exhaust systems operate at

- A) similar temperatures and higher pressures.
- B) higher temperatures and higher pressures.
- C) similar temperatures and pressures.

226. AMP073 AMP

Select a characteristic of a good weld on exhaust stacks.

- A) The weld should be built up 1/8 inch.
- B) Porousness or projecting globules should show in the weld.
- C) The weld should taper off smoothly into the base metal.

227. AMP056 AMP

On an aircraft that utilizes an exhaust heat exchanger as a source of cabin heat, how should the exhaust system be inspected?

- A) X rayed to detect any cracks.
- B) Hydrostatically tested.
- C) With the heater air shroud removed.

228. AMP056 AMP

What could be a result of undetected exhaust system leaks in a reciprocating engine powered airplane?

- A) Pilot/passenger incapacitation caused by carbon monoxide entering the cabin.
- B) A rough-running engine with increased fuel consumption.
- C) Too low exhaust back pressure resulting in the desired power settings not being attained.

229. AMP056 AMP

Dislodged internal muffler baffles on a small reciprocating engine may

- A) obstruct the muffler outlet and cause excessive exhaust back pressure.
- B) cause the engine to run excessively cool.

C) cause high fuel and oil consumption.

230. AMP056 AMP

Why is high nickel chromium steel used in many exhaust systems?

- A) High heat conductivity and flexibility.
- B) Corrosion resistance and low expansion coefficient.
- C) Corrosion resistance and high heat conductivity.

231. AMP056 AMP

What type of nuts are used to hold an exhaust system to the cylinders?

- A) Brass or heat-resistant nuts.
- B) High-temperature fiber self-locking nuts.
- C) High-temperature aluminum self-locking nuts.

232. AMP056 AMP

Sodium filled valves are advantageous to an aviation engine because they

- A) are lighter.
- B) dampen valve impact shocks.
- C) dissipate heat well.

233. AMP069 AMP

The hot section of a turbine engine is particularly susceptible to which of the following kind of damage?

- A) Galling.
- B) Pitting.
- C) Cracking.

234. AMP032 AMP

Thrust reversers utilizing a pneumatic actuating system usually receive operating pressure from

- A) the engine bleed air system.
- B) an on board hydraulic or electrical powered compressor.
- C) high pressure air reservoirs.

235. AMP008 AMP

Which statement is generally true regarding thrust reverser systems?

- A) It is possible to move some aircraft backward on the ground using reverse thrust.
- B) Engine thrust reversers on the same aircraft usually will not operate independently of each other (must all be simultaneously).

C) Mechanical blockage system design permits a deployment position aft of the exhaust nozzle only.

236. AMP052 AMP

What type of imbalance will cause a two blade propeller to have a persistent tendency to come to rest in a horizontal position (with the blades parallel to the ground) while being checked on a propeller balancing beam?

- A) Vertical.
- B) Horizontal.
- C) Harmonic.

237. AMP052 AMP

Apparent engine roughness is often a result of propeller unbalance. The effect of an unbalanced propeller will usually be

- A) approximately the same at all speeds.
- B) greater at low RPM.
- C) greater at high RPM.

238. AMP053 AMP

Grease used in aircraft propellers reduces the frictional resistance of moving parts and is easily molded into any form under pressure. This statement defines

- A) antifriction and plasticity characteristics of grease.
- B) antifriction and chemical stability of grease.
- C) viscosity and melting point of grease.

239. AMP052 AMP

Propeller blade angle is the angle between the

- A) chord of the blade and the relative wind.
- B) relative wind and the rotational plane of the propeller.
- C) chord of the blade and the rotational plane of the propeller.

240. AMP053 AMP

Which of the following is identified as the cambered or curved side of a propeller blade, corresponding to the upper surface of a wing airfoil section?

- A) Blade back.
- B) Blade chord.
- C) Blade face.

241. AMP052 AMP

How can a steel propeller hub be tested for cracks?

- A) By anodizing.
- B) By magnetic particle inspection.
- C) By etching.

242. AMP052 AMP

Which of the following defects is cause for rejection of wood propellers?

- A) Solder missing from screw heads securing metal tipping.
- B) An oversize hub or bolthole, or elongated boltholes.
- C) No protective coating on propeller.

243. AMP053 AMP

The thrust produced by a rotating propeller is a result of

- A) an area of low pressure behind the propeller blades.
- B) an area of decreased pressure immediately in front of the propeller blades.
- C) the angle of relative wind and rotational velocity of the propeller.

244. AMP052 AMP

The actual distance a propeller moves forward through the air during one revolution is known as the

- A) effective pitch.
- B) geometric pitch.
- C) relative pitch.

245. AMP053 AMP

The primary purpose of a cuff on a propeller is to

- A) distribute anti icing fluid.
- B) strengthen the propeller.
- C) increase the flow of cooling air to the engine nacelle.

246. AMP053 AMP

A constant speed propeller provides maximum efficiency by

- A) increasing blade pitch as the aircraft speed decreases.
- B) adjusting blade angle for most conditions encountered in flight.
- C) increasing the lift coefficient of the blade.

247. AMP053 AMP

What operational force tends to bend the propeller blades forward at the tip?

- A) Torque bending force.
- B) Centrifugal twisting force.

C) Thrust bending force.

248. AMP052 AMP

The primary purpose of a feathering propeller is to

- A) prevent further engine damage when an engine fails in flight.
- B) prevent propeller damage when an engine fails in flight.
- C) eliminate the drag created by a windmilling propeller when an engine fails in flight.

249. AMP052 AMP

(1) A mechanic certificate with a powerplant rating authorizes the holder to repair deep scars, nicks, and dents on aluminum propeller blades.

(2) A mechanic certificate with a powerplant rating authorizes the holder to perform minor straightening of steel propeller blades.

Regarding the above statements,

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

250. AMP052 AMP

What is a function of the automatic propeller synchronizing system on multiengine aircraft?

- A) To control the tip speed of all propellers.
- B) To control engine RPM and reduce vibration.
- C) To control the power output of all engines.

251. AMP053 AMP

Proper operation of electric deicing boots on individual propeller blades may best be determined by

- A) feeling the boots to see if they are heating.
- B) observing the ammeter or loadmeter for current flow.
- C) feeling the sequence of boot heating and have an assistant observe the loadmeter indications.

252. AMP052 AMP

On most reciprocating multiengine aircraft, automatic propeller synchronization is accomplished through the actuation of the

- A) throttle levers.
- B) propeller governors.
- C) propeller control levers.

253. AMP053 AMP

How is aircraft electrical power for propeller deicer systems transferred from the engine to the propeller hub assembly?

- A) By slip rings and segment plates.
- B) By slip rings and brushes.
- C) By flexible electrical connectors.

254. AMP052 AMP

If a flanged propeller shaft has dowel pins

- A) install the propeller so that the blades are positioned for hand propping.
- B) the propeller can be installed in only one position.
- C) check carefully for front cone bottoming against the pins.

255. AMP052 AMP

Which of the following statements concerning the installation of a new fixed pitch wood propeller is true?

- A) If a separate metal hub is used, final track should be accomplished prior to installing the hub in the propeller.
- B) NAS close tolerance bolts should be used to install the propeller.
- C) Inspect the bolts for tightness after the first flight and again after the first 25 hours of flying.

256. AMP052 AMP

Maximum taper contact between crankshaft and propeller hub is determined by using

- A) bearing blue color transfer.
- B) a micrometer.
- C) a surface gauge.

257. AMP052 AMP

Propeller blade tracking is the process of determining

- A) the plane of rotation of the propeller with respect to the aircraft longitudinal axis.
- B) that the blade angles are within the specified tolerance of each other.
- C) the positions of the tips of the propeller blades relative to each other.

258. AMP052 AMP

A fixed pitch wooden propeller that has been properly installed and the attachment bolts properly torqued exceeds the out of track allowance by 1/16 inch. The excessive out of track condition may be corrected by

- A) slightly overtightening the attachment bolts adjacent to the most forward blade.
- B) discarding the propeller since out of track conditions cannot be corrected.
- C) placing shims between the inner flange and the propeller.

259. AMP052 AMP

Minor surface damage located in a repairable area, but not on the leading or trailing edges of aluminum blades, may be repaired by first

- A) filing with a riffle file.
- B) filing with a half round or flat file.
- C) rough sanding and applying a proper filler.

260. AMP052 AMP

It is important that nicks in aluminum alloy propeller blades be repaired as soon as possible in order to

- A) maintain equal aerodynamic characteristics between the blades.
- B) eliminate stress concentration points.
- C) equalize the centrifugal loads between the blades.

261. AMP052 AMP

Repairs of aluminum alloy adjustable pitch propellers are not permitted to be made on which of the following propeller blade areas?

- A) Shank.
- B) Face.
- C) Back.

262. AMP052 AMP

Cold straightening a bent aluminum propeller blade may be accomplished by

- A) the holder of a mechanic certificate with a powerplant rating.
- B) an appropriately rated repair station or the manufacturer.
- C) a person working under the supervision of the holder of a mechanic certificate with both airframe and powerplant ratings.

263. AMP052 AMP

Which of the following generally renders an aluminum alloy propeller unrepairable?

- A) Any repairs that would require shortening and re-contouring of blades.
- B) Any slag inclusions or cold shuts.
- C) Transverse cracks of any size.

264. AMP052 AMP

One of the advantages of inspecting an aluminum propeller utilizing dye-penetrant inspection procedure is that

- A) defects just below the surface are indicated.

- B) it shows whether visible lines and other marks are actually cracks rather than scratches.
- C) it indicates overspeed condition.

265. AMP053 AMP

The propeller governor controls the

- A) oil to and from the pitch changing mechanism.
- B) spring tension on the boost pump speeder spring.
- C) linkage and counterweights from moving in and out.

266. AMP052 AMP

When the centrifugal force acting on the propeller governor flyweights overcomes the tension on the speeder spring, a propeller is in what speed condition?

- A) On speed.
- B) Underspeed.
- C) Overspeed.

267. AMP017 AMP

Fuel is normally supplied to an APU from

- A) its own independent fuel supply.
- B) the airplane's reserve fuel supply.
- C) the airplane's main fuel supply.

268. AMP017 AMP

Fuel scheduling during APU start and under varying pneumatic bleed and electrical loads is maintained

- A) manually through power control lever position.
- B) automatically by the APU fuel control system.
- C) automatically by an aircraft main engine fuel control unit.

269. AMP017 AMP

Usually, most of the load placed on an APU occurs when

- A) an electrical load is placed on the generator(s).
- B) the bleed air valve is opened.
- C) the bleed air valve is closed.

270. AMP068 AMP

When in operation, the speed of an APU

- A) is controlled by a cockpit power lever.

- B) remains at idle and automatically accelerates to rated speed when placed under load.
- C) remains at or near rated speed regardless of the load condition.