

06/20/2005

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

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1. A02P AMP

On which strokes are both valves on a four-stroke cycle reciprocating aircraft engine open?

- A) Power and exhaust.
- B) Intake and compression.
- C) Exhaust and intake.

2. A01P 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.

3. A02P AMP

Master rod bearings are generally what type?

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

4. A01P AMP

A nine cylinder engine with a bore of 5.5 inches and a stroke of 6 inches will have a total piston displacement of

- A) 740 cubic inches.
- B) 1,425 cubic inches.
- C) 1,283 cubic inches.

5. A02P AMP

Which statement is correct regarding engine crankshafts?



11. A01P AMP

Which bearing is least likely to be a roller or ball bearing?

- A) Rocker arm bearing (overhead valve engine).
- B) Master rod bearing (radial engine).
- C) Crankshaft main bearing (radial engine).

12. A01P 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.

13. A01P AMP

Which of the following will decrease volumetric efficiency in a reciprocating engine?

- 1. Full throttle operation.
  - 2. Low cylinder head temperatures.
  - 3. Improper valve timing.
  - 4. Sharp bends in the induction system.
  - 5. High carburetor air temperatures.
- A) 2, 4, and 5.
  - B) 1, 2, 3, and 4.
  - C) 3, 4, and 5.

14. A01P 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.

15. A01P AMP

A condition that can occur in radial engines but is unlikely to occur in horizontally opposed engines is

- A) zero valve clearance.
- B) valve overlap.
- C) hydraulic lock.

16. A02P 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.

23. A03P AMP

Before attempting to start a radial engine that has been shut down for more than 30 minutes,

- A) turn the propeller by hand three or four revolutions in the opposite direction of normal rotation to check for liquid lock.
- B) turn the ignition switch on before energizing the starter.
- C) turn the propeller by hand three to four revolutions in the normal direction of rotation to check for liquid lock.

24. A03P 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.

25. A03P AMP

At what speed must a crankshaft turn if each cylinder of a four stroke cycle engine is to be fired 200 times a minute?

- A) 800 RPM.
- B) 1,600 RPM.
- C) 400 RPM.

26. A03P 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.

27. A03P AMP

Excessive valve clearances will cause the duration of valve opening to

- A) increase for both intake and exhaust valves.
- B) decrease for both intake and exhaust valves.
- C) decrease for intake valves and increase for exhaust valves.

28. A03P AMP

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

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

29. A03P AMP

What special procedure must be followed when adjusting the valves of an engine equipped with a floating cam ring?

- A) Adjust valves when the engine is hot.
- B) Adjust all exhaust valves before intake valves.
- C) Eliminate cam bearing clearance when making valve adjustment.

30. A02P AMP

What is the purpose of the safety circllet installed on some valve stems?

- A) To hold the valve guide in position.
- B) To hold the valve spring retaining washer in position.
- C) To prevent valves from falling into the combustion chamber.

31. A04P AMP

What is the basic operational sequence for reducing the power output of an engine equipped with a constant speed propeller?

- A) Reduce the RPM, then the manifold pressure.
- B) Reduce the manifold pressure, then retard the throttle to obtain the correct RPM.
- C) Reduce the manifold pressure, then the RPM.

32. A02P AMP

Cam ground pistons are installed in some aircraft engines to

- A) provide a better fit at operating temperatures.
- B) act as a compensating feature so that a compensated magneto is not required.
- C) equalize the wear on all pistons.

33. A04P AMP

Which statement pertaining to fuel/air ratios is true?



What is likely to occur if a reciprocating engine is operated at high power settings before it is properly warmed up?

- A) Oil starvation of bearings and other parts.
- B) Excessive thinning of the engine oil.
- C) Accelerated oil breakdown and oxidation.

39. A04P AMP

Which of the following would most likely cause a reciprocating engine to backfire through the induction system at low RPM operation?

- A) Idle mixture too rich.
- B) Clogged derichment valve.
- C) Lean mixture.

40. A04P AMP

An unsupercharged aircraft reciprocating engine, operated at full throttle from sea level, to 10,000 feet, provided the RPM is unchanged, will

- A) lose power due to the reduced volume of air drawn into the cylinders.
- B) produce constant power due to the same volume of air drawn into the cylinders.
- C) lose power due to the reduced density of the air drawn into the cylinders.

41. A04P 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.

42. A04P AMP

During the inspection of an engine control system in which push pull control rods are used, the threaded rod ends should

- A) not be adjusted in length for rigging purposes because the rod ends have been properly positioned and staked during manufacture.
- B) be checked for thread engagement of at least two threads but not more than four threads.
- C) be checked for the amount of thread engagement by means of the inspection holes.

43. A04P 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.

44. A04P AMP

(1) Preignition is caused by improper ignition timing.

(2) Detonation occurs when an area of the combustion chamber becomes incandescent and ignites the fuel/air mixture in advance of normal timed ignition.

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.

45. A04P 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.

46. A04P AMP

Reduced air density at high altitude has a decided effect on carburetion, resulting in a reduction of engine power by

A) excessively enriching the fuel/air mixture.

B) excessively leaning the fuel/air mixture.

C) reducing fuel vaporization.

47. A03P 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.

48. A04P 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.

49. A04P AMP

Excessive valve clearance in a piston engine

- A) increases valve overlap.
- B) increases valve opening time.
- C) decreases valve overlap.

50. A03P AMP

Valve clearance changes on opposed type engines using hydraulic lifters are accomplished by

- A) rocker arm adjustment.
- B) rocker arm replacement.
- C) push rod replacement.

51. A03P AMP

What is an advantage of using metallic-sodium filled exhaust valves in aircraft reciprocating engines?

- A) Increased strength and resistance to cracking.
- B) Reduced valve operating temperatures.
- C) Greater resistance to deterioration at high valve temperatures.

52. A03P 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.

53. A03P AMP

By use of a differential pressure compression tester, it is determined that the No. 3 cylinder of a nine cylinder radial engine will not hold pressure after the crankshaft has been rotated 260° from top dead center compression stroke No. 1 cylinder. How can this indication usually be interpreted?

- A) A normal indication.
- B) Exhaust valve blow by.
- C) A damaged exhaust valve or insufficient exhaust valve clearance.

54. A03P AMP

What is the best indication of worn valve guides?

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

55. A03P AMP

During ground check an engine is found to be rough running, the magneto drop is normal, and the manifold pressure is higher than normal for any given RPM. The trouble may be caused by

- A) several spark plugs fouled on different cylinders.
- B) a leak in the intake manifold.
- C) a dead cylinder.

56. A03P 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.

57. A03P AMP

Standard aircraft cylinder oversizes usually range from 0.010 inch to 0.030 inch. Oversize on automobile engine cylinders may range up to 0.100 inch. This is because aircraft engine cylinders

- A) have more limited cooling capacity.
- B) have relatively thin walls and may be nitrided.
- C) operate at high temperatures.

58. A03P 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.

59. A04P 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.

60. A02P AMP

During overhaul, reciprocating engine exhaust valves are checked for stretch

- A) with a suitable inside spring caliper.
- B) with a contour or radius gauge.
- C) by placing the valve on a surface plate and measuring its length with a vernier height gauge.

61. A02P AMP

If the hot clearance is used to set the valves when the engine is cold, what will occur during operation of the engine?

- A) The valves will open early and close early.
- B) The valves will open late and close early.
- C) The valves will open early and close late.

62. A02P AMP

The primary purpose in setting proper valve timing and overlap is to

- A) permit the best possible charge of fuel/air mixture into the cylinders.
- B) gain more thorough exhaust gas scavenging.
- C) obtain the best volumetric efficiency and lower cylinder operating temperatures.

63. A02P 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.

64. A02P AMP

How many of the following are factors in establishing the maximum compression ratio limitations of an aircraft engine?

1. Detonation characteristics of the fuel used.
2. Design limitations of the engine.
3. Degree of supercharging.
4. Spark plug reach.

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

65. A04P AMP

If air is heard coming from the crankcase breather or oil filler during a differential compression check, what is this an indication of?

- A) Exhaust valve leakage.
- B) Intake valve leakage.
- C) Piston ring leakage.

66. A02P AMP



- A) The intake valve closes on the compression stroke.
- B) The exhaust valve opens on the exhaust stroke.
- C) The intake valve closes on the intake stroke.

73. A02P AMP

Some cylinder barrels are hardened by

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

74. A02P AMP

If the intake valve is opened too early in the cycle of operation of a four-stroke cycle engine, it may result in

- A) improper scavenging of exhaust gases.
- B) engine kickback.
- C) backfiring into the induction system.

75. A02P 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.

76. A02P AMP

What tool is generally used to measure the crankshaft rotation in degrees?

- A) Dial indicator.
- B) Timing disk.
- C) Prop Protractor.

77. A02P AMP

An aircraft reciprocating engine using hydraulic valve lifters is observed to have no clearance in its valve-operating mechanism after the minimum inlet oil and cylinder head temperatures for takeoff have been reached. When can this condition be expected?

- A) During normal operation.
- B) When the lifters become deflated.
- C) As a result of carbon and sludge becoming trapped in the lifter and restricting its motion.

78. A02P AMP



83. A04P AMP  
To what altitude will a turbo charged engine maintain sea level pressure?  
A) Critical altitude.  
B) Service ceiling.  
C) Pressure altitude.

84. A03P AMP  
If metallic particles are found in the oil filter during an inspection,  
A) it is an indication of normal engine wear unless the particles are nonferrous.  
B) the cause should be identified and corrected before the aircraft is released for flight.  
C) it is an indication of normal engine wear unless the deposit exceeds a specified amount.

85. A03P 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.

86. A03P AMP  
During routine inspection of a reciprocating engine, a deposit of small, bright, metallic particles which do not cling to the magnetic drain plug is discovered in the oil sump and on the surface of the oil filter. This condition  
A) may be a result of abnormal plain type bearing wear and is cause for further investigation.  
B) is probably a result of ring and cylinder wall wear and is cause for engine removal and/or overhaul.  
C) is normal in engines utilizing plain type bearings and aluminum pistons and is not cause for alarm.

87. A03P AMP  
Excessive valve clearance results in the valves opening  
A) late and closing early.  
B) early and closing late.  
C) late and closing late.

88. A03P AMP  
As the pressure is applied during a reciprocating engine compression check using a differential pressure tester, what would a movement of the propeller in the direction of engine rotation indicate?  
A) The piston was on compression stroke.

- B) The piston was on exhaust stroke.
- C) The piston was positioned past top dead center.

89. A03P 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.

90. A03P AMP

What is required by 14 CFR Part 43 Appendix D when performing an annual/ 100-hour inspection on a reciprocating engine aircraft?

- A) Magneto timing check.
- B) Cylinder compression check.
- C) Valve clearance check.

91. A02P AMP

The purpose of two or more valve springs in aircraft engines is to

- A) equalize side pressure on the valve stems.
- B) eliminate valve spring surge.
- C) equalize valve face loading.

92. A02P 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.

93. A03P AMP

What will be the likely result if the piston ring gaps happen to be aligned when performing a differential pressure compression check on a cylinder?

- A) Little or no effect.
- B) The rings will not be seated.
- C) A worn or defective ring(s) indication.

94. A03P 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.

95. A02P AMP

When cleaning aluminum and magnesium engine parts, it is inadvisable to soak them in solutions containing soap because

- A) some of the soap will become impregnated in the surface of the material and subsequently cause engine oil contamination and foaming.
- B) the soap can chemically alter the metals causing them to become more susceptible to corrosion.
- C) the parts can be destroyed by dissimilar metal electrolytic action if they are placed together in the solution for more than a few minutes.

96. A02P AMP

The volume of a cylinder equals 70 cubic inches when the piston is at bottom center. When the piston is at the top of the cylinder, the volume equals 10 cubic inches. What is the compression ratio?

- A) 1:7.
- B) 7:10.
- C) 7:1.

97. A02P AMP

How is proper end-gap clearance on new piston rings assured during the overhaul of an engine?

- A) By accurately measuring and matching the outside diameter of the rings with the inside diameter of the cylinders.
- B) By using rings specified by the engine manufacturer.
- C) By placing the rings in the cylinder and measuring the end-gap with a feeler gauge.

98. A02P 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.

99. A02P AMP

If the crankshaft runout readings on the dial indicator are plus .002 inch and minus .003 inch, the runout is



(1) The cold section includes the engine inlet, compressor, and turbine sections.

(2) The hot section includes the combustor, diffuser, and exhaust sections.

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.

106. B01P 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.

107. B02P 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.

108. B01P AMP

Some engine manufacturers of twin spool gas turbine engines identify turbine discharge pressure in their maintenance manuals as

A) Pt7.

B) Pt2.

C) Tt7.

109. B01P 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.

110. B01P AMP

What is the first engine instrument indication of a successful start of a turbine engine?

A) A rise in the engine fuel flow.

- B) A rise in oil pressure.
- C) A rise in the exhaust gas temperature.

111. B01P AMP

A turbine engine compressor which contains vanes on both sides of the impeller is a

- A) double entry centrifugal compressor.
- B) double entry axial flow compressor.
- C) single entry axial flow compressor.

112. B01P AMP

If, during inspection at engine overhaul, ball or roller bearings are found to have magnetism but otherwise have no defects, they

- A) cannot be used again.
- B) are in an acceptable service condition.
- C) must be degaussed before use.

113. B01P 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.

114. B01P AMP

What are the two functional elements in a centrifugal compressor?

- A) Turbine and compressor.
- B) Bucket and expander.
- C) Impeller and diffuser.

115. B01P 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.

116. B01P AMP

What are the two basic elements of the turbine section in a turbine engine?

- A) Impeller and diffuser.
- B) Hot and cold.

C) Stator and rotor.

117. B01P 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.

118. B02P AMP

Which statements are true regarding aircraft engine propulsion?

- 1. An engine driven propeller imparts a relatively small amount of acceleration to a large mass of air.
  - 2. Turbojet and turbofan engines impart a relatively large amount of acceleration to a smaller mass of air.
  - 3. In modern turboprop engines, nearly 50 percent of the exhaust gas energy is extracted by turbines to drive the propeller and compressor with the rest providing exhaust thrust.
- A) 1, 2, 3.  
B) 1, 2.  
C) 1, 3.

119. B01P AMP

In the dual axial flow or twin spool compressor system, the first stage turbine drives the

- A) N1 and N2 compressors.
- B) N2 compressor.
- C) N1 compressor.

120. B01P 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.

121. B01P 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.

122. B01P AMP

At what point in an axial flow turbojet engine will the highest gas pressures occur?

- A) At the turbine entrance.
- B) Within the burner section.
- C) At the compressor outlet.

123. B02P AMP

When the leading edge of a first stage turbine blade is found to have stress rupture cracks, which of the following should be suspected?

- A) Faulty cooling shield.
- B) Overtemperature condition.
- C) Overspeed condition.

124. B01P 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.

125. B02P 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.

126. B02P AMP

In which type of turbine engine combustion chamber is the case and liner removed and installed as one unit during routine maintenance?

- A) Can.
- B) Can-annular.
- C) Annular.

127. B02P 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.

128. B02P AMP

What is the purpose of the diffuser section in a turbine engine?

- A) To increase pressure and reduce velocity.
- B) To convert pressure to velocity.
- C) To reduce pressure and increase velocity.

129. B01P AMP

The fan rotational speed of a dual axial compressor forward fan engine is the same as the

- A) low pressure compressor.
- B) forward turbine wheel.
- C) high pressure compressor.

130. B01P AMP

What is the profile of a turbine engine compressor blade?

- A) The leading edge of the blade.
- B) A cutout that reduces blade tip thickness.
- C) The curvature of the blade root.

131. B01P AMP

In a gas turbine engine, combustion occurs at a constant

- A) volume.
- B) pressure.
- C) density.

132. B01P AMP

The abbreviation  $P_{t7}$  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.

133. B02P AMP

An advantage of the axial flow compressor is its

- A) low starting power requirements.

- B) low weight.
- C) high peak efficiency.

134. B01P AMP

What turbine engine section provides for proper mixing of the fuel and air?

- A) Combustion section.
- B) Compressor section.
- C) Diffuser section.

135. B01P 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.

136. B01P AMP

Some high volume turboprop and turbojet engines are equipped with two spool or split compressors. When these engines are operated at high altitudes, the

- A) low pressure rotor will increase in speed as the compressor load decreases in the lower density air.
- B) throttle must be retarded to prevent overspeeding of the high pressure rotor due to the lower density air.
- C) low pressure rotor will decrease in speed as the compressor load decreases in the lower density air.

137. B01P AMP

Turbine nozzle diaphragms located on the upstream side of each turbine wheel, are used in the gas turbine engine to

- A) decrease the velocity of the heated gases flowing past this point.
- B) direct the flow of gases parallel to the vertical line of the turbine blades.
- C) increase the velocity of the heated gases flowing past this point.

138. B01P AMP

Where is the highest gas pressure in a turbojet engine?

- A) At the outlet of the tailpipe section.
- B) At the entrance of the turbine section.
- C) In the entrance of the burner section.

139. B01P AMP

An exhaust cone placed aft of the turbine in a jet engine will cause the pressure in the first part of the exhaust duct to

- A) increase and the velocity to decrease.
- B) increase and the velocity to increase.
- C) decrease and the velocity to increase.

140. B02P AMP

Turbine blades are generally more susceptible to operating damage than compressor blades because of

- A) higher centrifugal loading.
- B) exposure to high temperatures.
- C) high pressure and high velocity gas flow.

141. B01P AMP

What is the function of the stator vane assembly at the discharge end of a typical axial flow compressor?

- A) To straighten airflow to eliminate turbulence.
- B) To direct the flow of gases into the combustion chambers.
- C) To increase air swirling motion into the combustion chambers.

142. B02P AMP

What is one purpose of the stator blades in the compressor section of a turbine engine?

- A) Stabilize the pressure of the airflow.
- B) Control the direction of the airflow.
- C) Increase the velocity of the airflow.

143. B01P 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.

144. B02P 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.

145. B02P AMP

The velocity of supersonic air as it flows through a divergent nozzle

- A) increases.
- B) decreases.
- C) is inversely proportional to the temperature.

146. B03P AMP

What is meant by a shrouded turbine?

- A) The turbine blades are shaped so that their ends form a band or shroud.
- B) The turbine wheel is enclosed by a protective shroud to contain the blades in case of failure.
- C) The turbine wheel has a shroud or duct which provides cooling air to the turbine blades.

147. B02P AMP

The stator vanes in an axial flow compressor

- A) convert velocity energy into pressure energy.
- B) convert pressure energy into velocity energy.
- C) direct air into the first stage rotor vanes at the proper angle.

148. B02P AMP

Hot spots on the tail cone of a turbine engine are possible indicators of a malfunctioning fuel nozzle or

- A) a faulty combustion chamber.
- B) a faulty igniter plug.
- C) an improperly positioned tail cone.

149. B02P AMP

What is the proper starting sequence for a turbojet engine?

- A) Ignition, starter, fuel.
- B) Starter, ignition, fuel.
- C) Starter, fuel, ignition.

150. B02P AMP

(1) In a turbine engine axial flow compressor, each consecutive pair of rotor and stator blades constitutes a pressure stage.

(2) In a turbine engine axial flow compressor, the number of rows of stages is determined by the amount of air and total pressure rise required.

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.

151. B02P AMP

The pressure of supersonic air as it flows through a divergent nozzle

- A) increases.
- B) decreases.
- C) is inversely proportional to the temperature.

152. B02P AMP

In a turbine engine with a dual spool compressor, the low speed compressor

- A) always turns at the same speed as the high speed compressor.
- B) is connected directly to the high speed compressor.
- C) seeks its own best operating speed.

153. B03P 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.

154. B02P AMP

What is used in turbine engines to aid in stabilization of compressor airflow during low thrust engine operation?

- A) Stator vanes and rotor vanes.
- B) Variable guide vanes and/or compressor bleed valves.
- C) Pressurization and dump valves.

155. B02P 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.

156. B03P AMP

What term is used to describe a permanent and cumulative deformation of the turbine blades of a turbojet engine?

- A) Stretch.
- B) Distortion.

C) Creep.

157. B02P AMP

The non-rotating axial-flow compressor airfoils in an aircraft gas turbine engine, are called

- A) pressurization vanes.
- B) stator vanes.
- C) bleed vanes.

158. B02P AMP

The purpose of a bleed valve, located in the beginning stages of the compressor, in an aircraft gas turbine engine is to

- A) vent some of the air overboard to prevent a compressor stall.
- B) Control excessively high RPM to prevent a compressor stall.
- C) Vent high ram air pressure overboard to prevent a compressor stall.

159. B03P AMP

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

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

160. B02P 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.

161. B02P AMP

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

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

162. B03P AMP

(1) Accumulation of contaminants in the compressor of a turbojet engine reduces aerodynamic efficiency of the blades.

(2) Two common methods for removing dirt deposits from turbojet engine compressor blades are a fluid wash and an abrasive grit blast.

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.

163. B02P AMP

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

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

164. B02P 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.

165. B03P 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.

166. B03P AMP

Which of the following can cause fan blade shingling in a turbofan engine?

- 1. Engine overspeed.
  - 2. Engine overtemperature.
  - 3. Large, rapid throttle movements.
  - 4. FOD.
- A) 1, 2.
  - B) 1, 2, 3, 4.
  - C) 1, 4.

167. B02P AMP

Generally, when starting a turbine engine, the starter should be disengaged

- A) after the engine has reached self-accelerating speed.
- B) only after the engine has reached full idle RPM.
- C) when the ignition and fuel system are activated.

168. B02P AMP

Anti icing of jet engine air inlets is commonly accomplished by

- A) electrical heating elements inside the inlet guide vanes.
- B) engine bleed air ducted through the critical areas.
- C) electrical heating elements located within the engine air inlet cowling.

169. B03P AMP

A condition known as 'hot streaking' in turbine engines is caused by

- A) a partially clogged fuel nozzle.
- B) a misaligned combustion liner.
- C) excessive fuel flow.

170. B02P AMP

What should be done initially if a turbine engine catches fire when starting?

- A) Turn off the fuel and continue engine rotation with the starter.
- B) Continue engine start rotation and discharge a fire extinguisher into the intake.
- C) Continue starting attempt in order to blow out the fire.

171. B03P AMP

In what section of a turbojet engine is the jet nozzle located?

- A) Combustion.
- B) Turbine.
- C) Exhaust.

172. B03P AMP

Severe rubbing of turbine engine compressor blades will usually cause

- A) bowing.
- B) cracking.
- C) galling.

173. B03P 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.

174. B03P AMP

A turbine engine hot section is particularly susceptible to which kind of damage?

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

175. B02P AMP

Which two elements make up the axial flow compressor assembly?

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

176. B03P AMP

If the RPM of an axial flow compressor remains constant, the angle of attack of the rotor blades can be changed by

- A) changing the velocity of the airflow.
- B) changing the compressor diameter.
- C) increasing the pressure ratio.

177. B03P AMP

Continued and/or excessive heat and centrifugal force on turbine engine rotor blades is likely to cause

- A) profile.
- B) creep.
- C) galling.

178. B02P AMP

An advantage of the centrifugal flow compressor is its high

- A) pressure rise per stage.
- B) ram efficiency.
- C) peak efficiency.

179. B03P 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.

180. B03P AMP

The compression ratio of an axial flow compressor is a function of the

- A) number of compressor stages.
- B) rotor diameter.
- C) air inlet velocity.

181. B02P AMP

Which turbine engine compressor offers the greatest advantages for both starting flexibility and improved high altitude performance?

- A) Dual stage, centrifugal flow.
- B) Split spool, axial flow.
- C) Single spool, axial flow.

182. B02P AMP

Reduced blade vibration and improved airflow characteristics in gas turbines are brought about by

- A) fir tree blade attachment.
- B) impulse type blades.
- C) shrouded turbine rotor blades.

183. B03P AMP

The Brayton cycle is known as the constant

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

184. B03P AMP

If a turbine engine is unable to reach takeoff EPR before its EGT limit is reached, this is an indication that the

- A) fuel control must be replaced.
- B) EGT controller is out of adjustment.
- C) compressor may be contaminated or damaged.

185. B02P 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.

186. B02P AMP

The recurrent ingestion of dust or other fine airborne particulates into a turbine engine can result in

- A) foreign object damage to the compressor section.
- B) the need for less frequent abrasive grit cleaning of the engine.
- C) erosion damage to the compressor and turbine sections.

187. B02P 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.

188. B02P AMP

Jet engine turbine blades removed for detailed inspection must be reinstalled in

- A) a specified slot 180° away.
- B) a specified slot 90° away in the direction of rotation.
- C) the same slot.

189. B03P AMP

Which of the following types of combustion sections are used in aircraft turbine engines?

- A) Annular, variable, and cascade vane.
- B) Can, multiple can, and variable.
- C) Multiple can, annular, and can-annular.

190. B03P AMP

The exhaust section of a turbine engine is designed to

- A) impart a high exit velocity to the exhaust gases.
- B) increase temperature, therefore increasing velocity.
- C) decrease temperature, therefore decreasing pressure.

191. B02P AMP

A purpose of the shrouds on the turbine blades of an axial flow engine is to

- A) reduce vibration.
- B) increase tip speed.
- C) reduce air entrance.

192. B02P AMP

The procedure for removing the accumulation of dirt deposits on compressor blades is called

- A) the soak method.

- B) field cleaning.
- C) the purging process.

193. B02P AMP  
Hot section inspections for many modern turbine engines are required

- A) only at engine overhaul.
- B) only when an overtemperature or overspeed has occurred.
- C) on a time or cycle basis.

194. B02P AMP  
The two types of centrifugal compressor impellers are

- A) single entry and double entry.
- B) rotor and stator.
- C) impeller and diffuser.

195. B03P AMP  
Why do some turbine engines have more than one turbine wheel attached to a single shaft?

- A) To facilitate balancing of the turbine assembly.
- B) To help stabilize the pressure between the compressor and the turbine.
- C) To extract more power from the exhaust gases than a single wheel can absorb.

196. B02P 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.

197. B02P 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.

198. B02P AMP  
Which of the following may be used to accomplish internal inspection of an assembled turbine engine?

- 1. Infrared photography.

2. Ultrasound.
3. A borescope.
4. Fluorescent penetrant and ultraviolet light.

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

199. B03P AMP

What is the possible cause when a turbine engine indicates no change in power setting parameters, but oil temperature is high?

- A) High scavenge pump oil flow.
- B) Engine main bearing distress.
- C) Turbine damage and/or loss of turbine efficiency.

200. B02P AMP

Using standard atmospheric conditions, the standard sea level temperature is

- A) 59 °F.
- B) 59 °C.
- C) 29 °C.

201. B02P AMP

Standard sea level pressure is

- A) 29.00 inches Hg.
- B) 29.29 inches Hg.
- C) 29.92 inches Hg.

202. B03P AMP

Which of the following variables affect the inlet air density of a turbine engine?

1. Speed of the aircraft.
2. Compression ratio.
3. Turbine inlet temperature.
4. Altitude of the aircraft.
5. Ambient temperature.
6. Turbine and compressor efficiency.

- A) 1, 3, 6.
- B) 1, 4, 5.
- C) 4, 5, 6.

203. B02P AMP

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

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

204. B02P AMP

Compressor field cleaning on turbine engines is performed primarily in order to

- A) prevent engine oil contamination and subsequent engine bearing wear or damage.
- B) facilitate flight line inspection of engine inlet and compressor areas for defects or FOD.
- C) prevent engine performance degradation, increased fuel costs, and damage or corrosion to gas path surfaces.

205. C01P AMP

Each powerplant installed on an airplane with a Standard Airworthiness Certificate must have been

- A) type certificated.
- B) manufactured under the TSO system.
- C) originally certificated for that aircraft.

206. C01P AMP

(1) Serviceability limits for turbine blades are much more stringent than are those for turbine nozzle vanes.

(2) A limited number of small nicks and dents can usually be permitted in any area of a turbine blade.

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.

207. C01P AMP

Which of the following conditions is usually not acceptable to any extent in turbine blades?

- A) Cracks.
- B) Pits.
- C) Dents.

208. C01P 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.

209. C01P AMP

How are discharge nozzles in a fuel injected reciprocating engine identified to indicate the flow range?

A) By an identification letter stamped on one of the hexes of the nozzle body.

B) By an identification metal tag attached to the nozzle body.

C) By color codes on the nozzle body.

210. C01P AMP

What publication contains the mandatory replacement time for parts of a turbine engine?

A) Engine Manufacturer's service instructions.

B) Engine Manufacturer's maintenance manual.

C) Airworthiness directive issued by the engine manufacturer.

211. C01P AMP

A ground incident that results in propeller sudden stoppage would require a crankshaft runout inspection. What publication would be used to obtain crankshaft runout tolerance?

A) Current manufacturer's maintenance instructions.

B) Type Certificate Data Sheet.

C) AC 43.13-1B, Acceptable Methods, Techniques, and Practices Aircraft Inspection and Repair.

212. C01P 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.

213. C01P AMP

Which of the following contains approved data for performing a major repair to an aircraft engine?

A) Engine Type Certificate Data Sheets.

B) Supplemental Type Certificates.

C) Manufacturer's maintenance instructions when FAA approved.

214. C01P AMP

The airworthiness standards for the issue of type certificates for small airplanes with nine or less passenger seats in the normal, utility, and acrobatic categories may be found in the

A) Supplemental Type Certificate.

B) Federal Aviation Regulations, Part 23.

C) Federal Aviation Regulations, Part 21.

215. C01P AMP

What publication is used for guidance to determine whether a powerplant repair is major or minor?

A) Airworthiness Directives.

B) Federal Aviation Regulations, Part 43, appendix A.

C) Technical Standard Orders.

216. C01P 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.

217. C01P AMP

When inspecting an aircraft reciprocating engine what document is used to determine if the proper magnetos are installed?

A) Instruction for continued airworthiness issued by the engine manufacturer.

B) Engine Manufacturer's Maintenance Manual.

C) Aircraft Engine Specifications or Type Certificate Data Sheets.

218. C01P AMP

Which of the following is used to monitor the mechanical integrity of the turbines, as well as to check engine operating conditions of a turbine engine?

A) Engine oil pressure.

B) Exhaust gas temperature.

C) Engine pressure ratio.

219. C01P 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).

220. C01P AMP

The breaking loose of small pieces of metal from coated surfaces, usually caused by defective plating or excessive loads, is called

- A) flaking.
- B) chafing.
- C) brinelling.

221. C01P AMP

Straightening nitrided crankshafts is

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

222. C01P 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.

223. C01P AMP

Which of the following component inspections is to be accomplished on a 100-hour inspection?

- A) Check internal timing of magneto.
- B) Check cylinder compression.
- C) Check valve timing.

224. C01P 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.

225. C01P AMP

When must an Airworthiness Directive (AD) be complied with after it becomes effective?

- A) As specified in the AD.
- B) During the next scheduled inspection.
- C) At the next scheduled overhaul.

226. C01P 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.

227. C01P AMP

- (1) Airworthiness Directives are Federal Aviation Regulations and must be complied with unless specific exemption is granted.
- (2) Airworthiness Directives of an emergency nature may require immediate compliance upon receipt.

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.

228. C01P 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.

229. C01P AMP

On a reciprocating engine aircraft using a shrouded exhaust muffler system as a source for cabin heat, the exhaust system should be

- A) visually inspected for any indication of cracks or an operational carbon monoxide detection test should be done.
- B) replaced at each reciprocating engine overhaul by a new or overhauled exhaust system or an hydrostatic test should be accomplished.
- C) removed and the exhaust muffler checked for cracks by using magnetic particle inspection method or an hydrostatic test should be done on the exhaust muffler.

230. C01P AMP

A Cessna 180 aircraft has a McCauley propeller Model No. 2A34C50/90A. The propeller is severely damaged in a ground accident, and this model propeller is not available for replacement. Which of the following should be used to find an approved alternate replacement?

- A) Summary of Supplemental Type Certificates.
- B) Aircraft Specifications/Type Certificate Data Sheets.
- C) Aircraft Engine and Propeller Specifications/ Type Certificate Data Sheets.

231. C01P AMP

Indentations on bearing races caused by high static loads are known as

- A) fretting.
- B) brinelling.
- C) galling.

232. H02P AMP

Which of the following instrument conditions is acceptable and does NOT require immediate correction?

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

- A) 1.
- B) 4.
- C) 5.

233. H02P 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.

234. H02P AMP

A change in engine manifold pressure has a direct effect on the

- A) piston displacement.
- B) compression ratio.
- C) mean effective cylinder pressure.

235. H02P 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.

236. H02P AMP

What instrument on a gas turbine engine should be monitored to minimize the possibility of a 'hot' start?

- A) RPM indicator.
- B) Turbine inlet temperature.
- C) Torquemeter.

237. H02P 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.

238. H02P AMP

Jet engine thermocouples are usually constructed of

- A) chromel alumel.
- B) iron constantan.
- C) alumel constantan.

239. H02P AMP

The RPM indication of a synchronous ac motor tachometer is governed by the generator

- A) voltage.
- B) current.

C) frequency.

240. H02P AMP

Instruments that measure relatively high fluid pressures, such as oil pressure gauges, are usually what type?

- A) Vane with calibrated spring.
- B) Bourdon tube.
- C) Diaphragm or bellows.

241. H02P AMP

Instruments that provide readings of low or negative pressure, such as manifold pressure gauges, are usually what type?

- A) Vane with calibrated spring.
- B) Bourdon tube.
- C) Diaphragm or bellows.

242. H02P AMP

In what units are turbine engine tachometers calibrated?

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

243. H02P AMP

In a turbine engine, where is the turbine discharge pressure indicator sensor located?

- A) At the aft end of the compressor section.
- B) At a location in the exhaust cone that is determined to be subjected to the highest pressures.
- C) Immediately aft of the last turbine stage.

244. H02P 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.

245. H02P AMP

The exhaust gas temperature (EGT) indicator on a gas turbine engine provides a relative indication of the

- A) exhaust temperature.

B) temperature of the exhaust gases as they pass the exhaust cone.

C) turbine inlet temperature.

246. H02P 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.

247. H02P AMP

Engine pressure ratio is determined by

A) multiplying engine inlet total pressure by turbine outlet total pressure.

B) dividing turbine outlet total pressure by engine inlet total pressure.

C) dividing engine inlet total pressure by turbine outlet total pressure.

248. H02P AMP

A red triangle, dot, or diamond mark on an engine instrument face or glass indicates

A) the maximum operating limit for all normal operations.

B) the maximum limit for high transients such as starting.

C) a restricted operating range.

249. H02P AMP

What is the primary purpose of the tachometer on an axial compressor turbine engine?

A) Monitor engine RPM during cruise conditions.

B) It is the most accurate instrument for establishing thrust settings under all conditions.

C) Monitor engine RPM during starting and to indicate overspeed conditions.

250. H02P AMP

The EGT gauge used with reciprocating engines is primarily used to furnish temperature readings in order to

A) obtain the best mixture setting for fuel efficiency.

B) obtain the best mixture setting for engine cooling.

C) prevent engine overtemperature.

251. H02P AMP

Engine pressure ratio is the total pressure ratio between the

A) aft end of the compressor and the aft end of the turbine.

- B) front of the compressor and the rear of the turbine.
- C) front of the engine inlet and the aft end of the compressor.

252. H02P 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.

253. H02P AMP

Which of the following is a primary engine instrument?

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

254. H02P AMP

What basic meter is used to indicate cylinder head temperature in most aircraft?

- A) Electro dynamometer.
- B) Galvanometer.
- C) Thermocouple type meter.

255. H02P 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.

256. H02P AMP

Which statement is correct concerning a thermocouple type temperature indicating instrument system?

- A) It is a balanced type, variable resistor circuit.
- B) It requires no external power source.
- C) It usually contains a balancing circuit in the instrument case to prevent fluctuations of the system voltage from affecting the temperature reading.

257. H02P AMP

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

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

258. H02P AMP

Where are the hot and cold junctions located in an engine cylinder temperature indicating system?

- A) Both junctions are located at the instrument.
- B) Both junctions are located at the cylinder.
- C) The hot junction is located at the cylinder and the cold junction is located at the instrument.

259. H02P AMP

Which of the following types of electric motors are commonly used in electric tachometers?

- A) Direct current, series wound motors.
- B) Synchronous motors.
- C) Direct current, shunt-wound motors.

260. H02P AMP

A complete break in the line between the manifold pressure gauge and the induction system will be indicated by the gauge registering

- A) prevailing atmospheric pressure.
- B) zero.
- C) lower than normal for conditions prevailing.

261. H02P AMP

A manifold pressure gauge is designed to

- A) maintain constant pressure in the intake manifold.
- B) indicate differential pressure between the intake manifold and atmospheric pressure.
- C) indicate absolute pressure in the intake manifold.

262. H01P AMP

On a twin engine aircraft with fuel injected reciprocating engines, one fuel flow indicator reads considerably higher than the other in all engine operating configurations. What is the probable cause of this indication?

- A) Carburetor icing.
- B) One or more fuel nozzles are clogged.
- C) Alternate air door stuck open.

263. H01P AMP

The fuel flow indication data sent from motor driven impeller and turbine, and motorless type fuel flow transmitters is a measure of

- A) fuel mass flow.
- B) fuel volume flow.
- C) engine burner pressure drop.

264. H01P AMP

In addition to fuel quantity, a computerized fuel system (CFS) with a totalizer indicator provides indication of how many of the following?

- 1. Fuel flow rate.
  - 2. Fuel used since reset or initial start up.
  - 3. Fuel time remaining at current power setting.
  - 4. Fuel temperature.
- A) Two.
  - B) Three.
  - C) Four.

265. H01P AMP

The fuel flow indication system used with many fuel-injected opposed engine airplanes utilizes a measure of

- A) fuel flow volume.
- B) fuel pressure.
- C) fuel flow mass.

266. H01P AMP

The fuel flow indicator rotor and needle for a motor impeller and turbine indicating system is driven by

- A) an electrical signal.
- B) direct coupling to the motor shaft.
- C) a mechanical gear train.

267. H01P 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.

268. H01P AMP

The principal fault in the pressure type fuel flowmeter indicating system, installed on a horizontally opposed continuous-flow fuel injected aircraft reciprocating engine, is that a plugged fuel injection nozzle will cause a

- A) normal operation indication.
- B) lower than normal fuel flow indication.
- C) higher than normal fuel flow indication.

269. H01P 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.

270. H01P AMP

Which unit most accurately indicates fuel consumption of a reciprocating engine?

- A) Fuel flowmeter.
- B) Fuel pressure gauge.
- C) Electronic fuel quantity indicator.

271. H02P AMP

(1) Powerplant instrument range markings show whether the current state of powerplant operation is normal, acceptable for a limited time, or unauthorized.

(2) Powerplant instrument range markings are based on installed engine operating limits which may not exceed (but are not necessarily equal to) those limits shown on the engine Type Certificate Data Sheet.

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.

272. H02P AMP

What unit in a tachometer system sends information to the indicator?

- A) The three phase ac generator.
- B) The two phase ac generator.
- C) The synchronous motor.

273. H02P AMP

(1) Engine pressure ratio (EPR) is a ratio of the exhaust gas pressure to the engine inlet air pressure, and indicates the thrust produced.

(2) Engine pressure ratio (EPR) is a ratio of the exhaust gas pressure to the engine inlet air pressure, and indicates volumetric efficiency.

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.

274. H02P AMP

Engine oil temperature gauges indicate the temperature of the oil

A) entering the oil cooler.

B) entering the engine.

C) in the oil storage tank.

275. H02P 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.

276. H02P AMP

Why do helicopters require a minimum of two synchronous tachometer systems?

A) One indicates engine RPM and the other tail rotor RPM.

B) One indicates main rotor RPM and the other tail rotor RPM.

C) One indicates engine RPM and the other main rotor RPM.

277. H02P 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.

278. H02P AMP

A common type of electrically operated oil temperature gauge utilizes

A) either a wheatstone bridge or ratiometer circuit.

B) a thermocouple type circuit.

C) vapor pressure and pressure switches.

279. H02P AMP

(1) Generally, when a turbine engine indicates high EGT for a particular EPR (when there is no significant damage), it means that the engine is out of trim.

(2) Some turbine powered aircraft use RPM as the primary indicator of thrust produced, others use EPR as the primary indicator.

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.

280. H02P AMP

The indication on a thermocouple-type cylinder head temperature indicator is produced by

A) resistance changes in two dissimilar metals.

B) a difference in the voltage between two dissimilar metals.

C) a current generated by the temperature difference between dissimilar metal hot and cold junctions.

281. I01P AMP

What is the operating principle of the spot detector sensor in a fire detection system?

A) Resistant core material that prevents current flow at normal temperatures.

B) A conventional thermocouple that produces a current flow.

C) A bimetallic thermostwitch that closes when heated to a high temperature.

282. I01P 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.

283. I01P AMP

Two continuous-loop fire detection systems that will not test due to a broken detector element are the

A) Kidde system and the Lindberg system.

- B) Kidde system and the Fenwal system.
- C) thermocouple system and the Lindberg system.

284. I01P AMP

Which of the following fire detection systems measures temperature rise compared to a reference temperature?

- A) Thermocouple.
- B) Thermal switch.
- C) Lindberg continuous element.

285. I01P AMP

A fire involving energized electrical equipment is defined as a

- A) class B fire.
- B) class D fire.
- C) class C fire.

286. I01P AMP

How are most aircraft turbine engine fire extinguishing systems activated?

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

287. I01P AMP

A fire detection system that operates on the rate of temperature rise is a

- A) continuous loop system.
- B) thermocouple system.
- C) thermal switch system.

288. I01P 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

289. I01P AMP

How does carbon dioxide (CO<sub>2</sub>) extinguish an aircraft engine fire?

- A) Contact with the air converts the liquid into snow and gas which smothers the flame.

- B) By lowering the temperature to a point where combustion will not take place.
- C) The high pressure spray lowers the temperature and blows out the fire.

290. I01P AMP

A fuel or oil fire is defined as a

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

291. I01P AMP

Which of the following is the safest fire extinguishing agent to use from a standpoint of toxicity and corrosion hazards?

- A) Dibromodifluoromethane (Halon 1202).
- B) Bromochlorodifluoromethane (Halon 1211).
- C) Bromotrifluoromethane (Halon 1301).

292. I01P 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.

293. I01P AMP

A fire detection system operates on the principle of a buildup of gas pressure within a tube proportional to temperature. Which of the following systems does this statement define?

- A) Kidde continuous loop system.
- B) Lindberg continuous element system.
- C) Thermal switch system.

294. I01P AMP

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

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

295. I01P AMP

How is the fire extinguishing agent distributed in the engine section?

- A) Spray nozzles and fluid pumps.

- B) Nitrogen pressure and slinger rings.
- C) Spray nozzles and perforated tubing.

296. I01P 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.

297. I01P AMP

What is the principle of operation of the continuous loop fire detector system sensor?

- A) Fuse material which melts at high temperatures.
- B) Core resistance material which prevents current flow at normal temperatures.
- C) A bimetallic thermostitch which closes when heated to a high temperature.

298. I01P AMP

The fire detection system that uses a single wire surrounded by a continuous string of ceramic beads in a tube is the

- A) Fenwal system.
- B) Kidde system.
- C) thermocouple system.

299. I01P AMP

The fire detection system that uses two wires imbedded in a ceramic core within a tube is the

- A) Fenwal system.
- B) Lindberg system.
- C) Kidde system.

300. I01P AMP

A continuous loop fire detector is what type of detector?

- A) Spot detector.
- B) Overheat detector.
- C) Rate of temperature rise detector.

301. I01P AMP

Which of the following fire detection systems will detect a fire when an element is inoperative but will not test when the test circuit is energized?

- A) The Kidde system and the thermocouple system.

- B) The Kidde system and the Fenwal system.
- C) The thermocouple system and the Lindberg system.

302. I01P 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.

303. I01P AMP

For fire detection and extinguishing purposes, aircraft powerplant areas are divided into fire zones based on

- A) hot and cold sections of the engine.
- B) the volume and smoothness of the airflow through engine compartments.
- C) engine type and size.

304. I01P 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.

305. I01P AMP

(Refer to Powerplant figure 3.) What are the fire-extinguisher container pressure limits when the temperature is 50 F?

- A) 425 - 575 PSIG.
- B) 435 - 605 PSIG.
- C) 475 - 625 PSIG.

306. I01P 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.

307. I01P AMP

The use of water on class D fires

- A) is most effective if sprayed in a fine mist.
- B) will cause the fire to burn more violently and can cause explosions.
- C) has no effect.

308. I01P 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.

309. I01P AMP

The most satisfactory extinguishing agent for an electrical fire is

- A) carbon tetrachloride.
- B) carbon dioxide.
- C) methyl bromide.

310. I01P AMP

Which of the following fire detectors are commonly used in the power section of an engine nacelle?

- A) CO detectors.
- B) Smoke detectors.
- C) Rate of temperature rise detectors.

311. I01P AMP

Which of the following fire detection systems uses heat in the normal testing of the system?

- A) The thermocouple system and the Lindberg system.
- B) The Kidde system and the Fenwal system.
- C) The thermocouple system and the Fenwal system.

312. J02P AMP

Electrical switches are rated according to the

- A) voltage and the current they can control.
- B) resistance rating of the switch and the wiring.
- C) resistance and the temperature rating.

313. J02P AMP

When selecting an electrical switch for installation in an aircraft circuit utilizing a direct current motor,

- A) a switch designed for dc should be chosen.
- B) a derating factor should be applied.
- C) only switches with screw type terminal connections should be used.

314. J01P 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.

315. J02P AMP

ON-OFF two position engine electrical switches should be installed

- A) so that the toggle will move in the same direction as the desired motion of the unit controlled.
- B) under a guard.
- C) so the ON position is reached by a forward or upward motion.

316. J02P 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.

317. J02P AMP

When a 28 volt, 75 ampere generator is installed on an aircraft, an electrical load analysis ground check is performed and it is determined that the battery is furnishing 57 amperes to the system, with all electrical equipment operating.

This indicates

- A) that the generator load will exceed the generator limit.
- B) the load will be within the generator load limit.
- C) the load exceeds the maximum system percentage capacity.

318. J02P 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.

319. J02P AMP

- (1) Most modern aircraft use circuit breakers rather than fuses to protect their electrical circuits.  
(2) Federal Aviation Regulations Part 23 requires that all electrical circuits incorporate some form of circuit protective device.

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.

320. J02P AMP

Bonding jumpers should be designed and installed in such a manner that they

- A) are not subjected to flexing by relative motion of airframe or engine components.  
B) provide a low electrical resistance in the ground circuit.  
C) prevent buildup of a static electrical charge between the airframe and the surrounding atmosphere.

321. J01P AMP

What is used to polish commutators or slip rings?

- A) Very fine sandpaper.  
B) Crocus cloth or fine oilstone.  
C) Aluminum oxide or garnet paper.

322. J02P AMP

The time/current capacities of a circuit breaker or fuse must be

- A) above those of the associated conductor.  
B) equal to those of the associated conductor.  
C) below those of the associated conductor.

323. J02P 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.

324. J01P AMP

A high surge of current is required when a dc electric motor is first started. As the speed of the motor increases,

- A) the counter emf decreases proportionally.

B) the applied emf increases proportionally.

C) the counter emf builds up and opposes the applied emf, thus reducing the current flow through the armature.

325. J02P AMP

Which Federal Aviation Regulation specifies that each resettable circuit protective device requires a manual operation to restore service after the device has interrupted the circuit?

- A) 14 CFR Part 23.
- B) 14 CFR Part 43.
- C) 14 CFR Part 91.

326. J02P 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.

327. J02P AMP

What speed must an eight-pole ac generator turn to produce 400-Hertz ac?

- A) 400 RPM.
- B) 1,200 RPM.
- C) 6,000 RPM.

328. J01P AMP

Upon what does the output frequency of an ac generator (alternator) depend?

- A) The speed of rotation and the strength of the field.
- B) The speed of rotation, the strength of the field, and the number of field poles.
- C) The speed of rotation and the number of field poles.

329. J02P 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.

330. J01P AMP

If a generator is malfunctioning, its voltage can be reduced to residual by actuating the

- A) rheostat.

B) generator master switch.

C) master solenoid.

331. J02P AMP

Arcing at the brushes and burning of the commutator of a motor may be caused by

A) weak brush springs.

B) excessive brush spring tension.

C) low mica.

332. J02P AMP

Which Federal Aviation Regulation requirement prevents the use of automatic reset circuit breakers?

A) 14 CFR Part 21.

B) 14 CFR Part 23.

C) 14 CFR Part 91.

333. J01P AMP

What is the purpose of a reverse current cutout relay?

A) It eliminates the possibility of reversed polarity of the generator output current.

B) It prevents fluctuations of generator voltage.

C) It opens the main generator circuit whenever the generator voltage drops below the battery voltage.

334. J01P 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).

335. J02P AMP

(Refer to Powerplant figure 4.) The following data concerning the installation of an electrical unit is known: current requirements for continuous operation - 11 amperes; measured cable length - 45 feet; system voltage - 28 volts (do not exceed 1 volt drop); cable in conduit and bundles. What is the minimum size copper electrical cable that may be selected?

A) No. 10.

B) No. 12.

C) No. 14.

336. J01P AMP

The constant current method of charging a ni-cad battery

- A) will bring it up to fully charged in the shortest amount of time.
- B) will lead to cell imbalance over a period of time.
- C) is the method most effective in maintaining cell balance.

337. J01P AMP

The generating system of an aircraft charges the battery by using

- A) constant current and varying voltage.
- B) constant voltage and varying current.
- C) constant voltage and constant current.

338. J01P AMP

The reason for flashing the field in a generator is to

- A) restore correct polarity and/or residual magnetism to the field poles.
- B) increase generator capacity.
- C) remove excessive deposits.

339. J01P AMP

What is the frequency of most aircraft alternating current?

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

340. J02P 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.

341. J01P AMP

As the flux density in the field of a dc generator increases and the current flow to the system increases, the

- A) generator voltage decreases.
- B) generator amperage decreases.
- C) force required to turn the generator increases.

342. J02P AMP

The maximum number of terminals that may be connected to any one terminal stud in an aircraft electrical system is

- A) two.
- B) three.
- C) four.

343. J01P AMP

What are two types of ac motors that are used to produce a relatively high torque?

- A) Shaded pole and shunt field.
- B) Shunt field and single phase.
- C) Three phase induction and capacitor start.

344. J02P 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.

345. J01P AMP

How many hours will a 140 ampere hour battery deliver 15 amperes?

- A) 1.40 hours.
- B) 9.33 hours.
- C) 14.0 hours.

346. J01P AMP

Generator voltage will not build up when the field is flashed and solder is found on the brush cover plate. These are most likely indications of

- A) an open armature.
- B) excessive brush arcing.
- C) armature shaft bearings overheating.

347. J01P AMP

What is the ampere-hour rating of a storage battery that is designed to deliver 45 amperes for 2.5 hours?

- A) 112.5 ampere hour.
- B) 90.0 ampere hour.
- C) 45.0 ampere hour.

348. J01P 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.

349. J01P AMP

What precaution is usually taken to prevent electrolyte from freezing in a lead acid battery?

- A) Place the aircraft in a hangar.
- B) Remove the battery and keep it under constant charge.
- C) Keep the battery fully charged.

350. J01P AMP

One way that the automatic ignition relight systems are activated on gas turbine engines is by a

- A) drop in compressor discharge pressure.
- B) sensing switch located in the tailpipe.
- C) drop in fuel flow.

351. J01P AMP

(1) Alternators are rated in volt amps, which is a measure of the apparent power being produced by the generator.

(2) Alternating current has the advantage over direct current in that its voltage and current can easily be stepped up or down.

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.

352. J02P AMP

In order to reduce the possibility of ground shorting the circuits when the connectors are separated for maintenance, the AN and MS electrical connectors should be installed with the

- A) socket section on the ground side of the electrical circuit.
- B) pin section on the ground side of the electrical circuit.
- C) pin section on the positive side of the electrical circuit.

353. J02P 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.

354. J02P AMP

Which of the following Federal Aviation Regulations require that all aircraft using fuses as the circuit protective devices carry 'one spare set of fuses, or three spare fuses of each kind required'?

- A) 14 CFR Part 23.
- B) 14 CFR Part 43.
- C) 14 CFR Part 91.

355. J02P AMP

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

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

356. J02P AMP

A typical barrier type aircraft terminal strip is made of

- A) paper base phenolic compound.
- B) polyester resin and graphite compound.
- C) layered aluminum impregnated with compound.

357. J01P 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.

358. J02P 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.

359. J02P AMP

- (1) Electrical wires larger than 10 gauge use uninsulated terminals.
- (2) Electrical wires smaller than 10 gauge use uninsulated terminals.

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.

360. J02P AMP

When does current flow through the coil of a solenoid operated electrical switch?

- A) Continually, as long as the aircraft's electrical system master switch is on.
- B) Continually, as long as the control circuit is complete.
- C) Only until the movable points contact the stationary points.

361. J02P AMP

Which of the following aircraft circuits does NOT contain a fuse/circuit breaker?

- A) Generator circuit.
- B) Air conditioning circuit.
- C) Starter circuit.

362. J02P AMP

Aircraft electrical wire size is measured according to the

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

363. J01P AMP

The most effective method of regulating aircraft direct current generator output is to vary, according to the load requirements, the

- A) strength of the stationary field.
- B) generator speed.
- C) number of rotating armature loops in use.

364. J01P 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.

365. J02P AMP

The resistance of the current return path through the aircraft is always considered negligible, provided the

A) voltage drop across the circuit is checked.

B) generator is properly grounded.

C) structure is adequately bonded.

366. J01P AMP

How are the rotor windings of an aircraft alternator usually excited?

A) By a constant ac voltage from the battery.

B) By a constant ac voltage.

C) By a variable direct current.

367. J02P AMP

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

A) improve conductivity.

B) add strength.

C) prevent oxidization.

368. J02P AMP

When installing an electrical switch, under which of the following conditions should the switch be derated from its nominal current rating?

A) Conductive circuits.

B) Capacitive circuits.

C) Direct current motor circuits.

369. J02P 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.

370. J01P AMP

According to the electron theory of the flow of electricity, when a properly functioning dc alternator and voltage regulating system is charging an aircraft's battery, the direction of current flow through the battery

- A) is into the negative terminal and out the positive terminal.
- B) is into the positive terminal and out the negative terminal.
- C) cycles back and forth with the number of cycles per second being controlled by the rotational speed of the alternator.

371. J01P AMP

Aircraft that operate more than one generator connected to a common electrical system must be provided with

- A) automatic generator switches that operate to isolate any generator whose output is less than 80 percent of its share of the load.
- B) an automatic device that will isolate nonessential loads from the system if one of the generators fails.
- C) individual generator switches that can be operated from the cockpit during flight.

372. J02P AMP

Electrical circuit protection devices are installed primarily to protect the

- A) switches.
- B) units.
- C) wiring.

373. J01P AMP

Why is a constant speed drive used to control the speed of some aircraft engine driven generators?

- A) So that the voltage output of the generator will remain within limits.
- B) To eliminate uncontrolled surges of current to the electrical system.
- C) So that the frequency of the alternating current output will remain constant.

374. J01P AMP

What type of electric motor is generally used with a direct-cranking engine starter?

- A) Direct current, shunt-wound motor.
- B) Direct current, series-wound motor.
- C) Synchronous motor.

375. J01P AMP

The stationary field strength in a direct current generator is varied

- A) by the reverse-current relay.
- B) because of generator speed.

C) according to the load requirements.

376. J01P AMP

A certain direct current series motor mounted within an aircraft draws more amperes during start than when it is running under its rated load. The most logical conclusion that may be drawn is

- A) the starting winding is shorted.
- B) the brushes are floating at operating RPM because of weak brush springs.
- C) the condition is normal for this type of motor.

377. J01P 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.

378. K02P AMP

- (1) Fuel may be used to cool oil in gas turbine engines.
- (2) Ram air may be used to cool oil in gas turbine engines.

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.

379. K02P AMP

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

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

380. K02P AMP

In an axial flow turbine engine, compressor bleed air is sometimes used to aid in cooling the

- A) fuel.
- B) inlet guide vanes.
- C) turbine, vanes, blades, and bearings.

381. K02P 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.

382. K02P AMP

In a jet engine which uses a fuel oil heat exchanger, the oil temperature is controlled by a thermostatic valve that regulates the flow of

- A) fuel through the heat exchanger.
- B) both fuel and oil through the heat exchanger.
- C) oil through the heat exchanger.

383. K02P 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.

384. K02P AMP

Which of the following is a function of the fuel oil heat exchanger on a turbojet engine?

- A) Aerates the fuel.
- B) Emulsifies the oil.
- C) Increases fuel temperature.

385. K02P AMP

In a reciprocating engine oil system, the temperature bulb senses oil temperature

- A) at a point after the oil has passed through the oil cooler.
- B) while the oil is in the hottest area of the engine.
- C) immediately before the oil enters the oil cooler.

386. K02P AMP

Why are fixed orifice nozzles used in the lubrication system of gas turbine engines?

- A) To provide a relatively constant oil flow to the main bearings at all engine speeds.
- B) To keep back pressure on the oil pump, thus preventing an air lock.
- C) To protect the oil seals by preventing excessive pressure from entering the bearing cavities.

387. K02P AMP

At cruise RPM, some oil will flow through the relief valve of a gear type engine oil pump. This is normal as the relief valve is set at a pressure which is

- A) lower than the pump inlet pressure.
- B) lower than the pressure pump capabilities.
- C) higher than pressure pump capabilities.

388. K02P AMP

What will happen to the return oil if the oil line between the scavenger pump and the oil cooler separates?

- A) Oil will accumulate in the engine.
- B) The return oil will be pumped overboard.
- C) The scavenger return line check valve will close and force the oil to bypass directly to the intake side of the pressure pump.

389. K02P AMP

The oil dampened main bearing utilized in some turbine engines is used to

- A) provide lubrication of bearings from the beginning of starting rotation until normal oil pressure is established.
- B) provide an oil film between the outer race and the bearing housing in order to reduce vibration tendencies in the rotor system, and to allow for slight misalignment.
- C) dampen surges in oil pressure to the bearings.

390. K02P AMP

The engine oil temperature regulator is usually located between which of the following on a dry sump reciprocating engine?

- A) The engine oil supply pump and the internal lubrication system.
- B) The scavenger pump outlet and the oil storage tank.
- C) The oil storage tank and the engine oil supply pump.

391. K02P AMP

After making a welded repair to a pressurized type turbine engine oil tank, the tank should be pressure checked to

- A) not less than 5 PSI plus the maximum operating pressure of the tank.
- B) not less than 5 PSI plus the average operating pressure of the tank.
- C) 5 PSI.

392. K02P 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.

393. K02P AMP

What would be the probable result if the oil system pressure relief valve should stick in the open position on a turbine engine?

- A) Increased oil pressure.
- B) Decreased oil temperature.
- C) Insufficient lubrication.

394. K02P 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.

395. K02P 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.

396. K02P AMP

What is the primary purpose of the oil breather pressurization system that is used on turbine engines?

- A) Prevents foaming of the oil.
- B) Allows aeration of the oil for better lubrication because of the air/oil mist.
- C) Provides a proper oil spray pattern from the main bearing oil jets.

397. K03P AMP

What is the source of most of the heat that is absorbed by the lubricating oil in a reciprocating engine?

- A) Crankshaft main bearings.
- B) Exhaust valves.
- C) Pistons and cylinder walls.

398. K01P AMP

What type of oil system is usually found on turbine engines?

- A) Dry sump, pressure, and spray.

- B) Dry sump, dip, and splash.
- C) Wet sump, spray, and splash.

399. K01P AMP

What will be the result of operating an engine in extremely high temperatures using a lubricant recommended by the manufacturer for a much lower temperature?

- A) The oil pressure will be higher than normal.
- B) The oil temperature and oil pressure will be higher than normal.
- C) The oil pressure will be lower than normal.

400. K01P AMP

- (1) Gas turbine and reciprocating engine oils can be mixed or used interchangeably.
- (2) Most gas turbine engine oils are synthetic.

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.

401. K01P AMP

The time in seconds required for exactly 60 cubic centimeters of oil to flow through an accurately calibrated orifice at a specific temperature is recorded as a measurement of the oil's

- A) flash point.
- B) specific gravity.
- C) viscosity.

402. K01P AMP

Upon what quality or characteristic of a lubricating oil is its viscosity index based?

- A) Its resistance to flow at a standard temperature as compared to high grade paraffin base oil at the same temperature.
- B) Its rate of change in viscosity with temperature change.
- C) Its rate of flow through an orifice at a standard temperature.

403. K01P AMP

Compared to reciprocating engine oils, the types of oils used in turbine engines

- A) are required to carry and disperse a higher level of combustion by-products.
- B) may permit a somewhat higher level of carbon formation in the engine.
- C) have less tendency to produce lacquer or coke.

404. K01P AMP

The oil used in reciprocating engines has a relatively high viscosity due to

- A) the reduced ability of thin oils to maintain adequate film strength at altitude (reduced atmospheric pressure).
- B) the relatively high rotational speeds.
- C) large clearances and high operating temperatures.

405. K01P AMP

If all other requirements can be met, what type of oil should be used to achieve theoretically perfect engine lubrication?

- A) The thinnest oil that will stay in place and maintain a reasonable film strength.
- B) An oil that combines high viscosity and low demulsibility.
- C) An oil that combines a low viscosity index and a high neutralization number.

406. K01P 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.

407. K02P AMP

As a general rule, the mixture setting on a reciprocating engine operating at or near takeoff power that provides the best cooling is

- A) FULL RICH.
- B) LEAN.
- C) FULL LEAN.

408. K01P AMP

The viscosity of a liquid is a measure of its

- A) resistance to flow.
- B) rate of change of internal friction with change in temperature.
- C) weight, or density.

409. K03P 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.

410. K01P AMP

Which of the following factors helps determine the proper grade of oil to use in a particular engine?

- A) Adequate lubrication in various attitudes of flight.
- B) Positive introduction of oil to the bearings.
- C) Operating speeds of bearings.

411. K01P AMP

Specific gravity is a comparison of the weight of a substance to the weight of an equal volume of

- A) oil at a specific temperature.
- B) distilled water at a specific temperature.
- C) mercury at a specific temperature.

412. K01P AMP

The recommended aircraft engine lubricants are

- A) mineral or synthetic based.
- B) vegetable, mineral, or synthetic based.
- C) animal, mineral, or synthetic based.

413. K01P 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.

414. K01P AMP

Manufacturers normally require turbine engine oil servicing within a short time after engine shutdown primarily to

- A) prevent overservicing.
- B) help dilute and neutralize any contaminants that may already be present in the engine's oil system.
- C) provide a better indication of any oil leaks in the system.

415. K01P 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.

416. K03P AMP

In order to relieve excessive pump pressure in an engine's internal oil system, most engines are equipped with a

- A) vent.
- B) bypass valve.
- C) relief valve.

417. K02P AMP

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

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

418. K01P AMP

Which of these characteristics is desirable in turbine engine oil?

- A) Low flash point.
- B) High flash point.
- C) High volatility.

419. K03P AMP

If the oil in the oil cooler core and annular jacket becomes congealed, what unit prevents damage to the cooler?

- A) Oil pressure relief valve.
- B) Airflow control valve.
- C) Surge protection valve.

420. K03P AMP

The valve assemblies of opposed reciprocating engines are lubricated by means of a

- A) gravity feed system.
- B) splash and spray system.
- C) pressure system.

421. K03P 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.

422. K03P AMP

How are the piston pins of most aircraft engines lubricated?

- A) By pressure oil through a drilled passageway in the heavy web portion of the connecting rod.
- B) By oil which is sprayed or thrown by the master or connecting rods.
- C) By the action of the oil control ring and the series of holes drilled in the ring groove directing oil to the pin and piston pin boss.

423. K03P AMP

The vent line connecting the oil supply tank and the engine in some dry sump engine installations permits

- A) pressurization of the oil supply to prevent cavitation of the oil supply pump.
- B) oil vapors from the engine to be condensed and drained into the oil supply tank.
- C) the oil tank to be vented through the normal engine vent.

424. K03P AMP

What is the purpose of the check valve generally used in a dry sump lubrication system?

- A) To prevent the scavenger pump from losing its prime.
- B) To prevent the oil from the supply tank from seeping into the crankcase during inoperative periods.
- C) To prevent the oil from the pressure pump from entering the scavenger system.

425. K03P AMP

Where is the oil of a dry sump reciprocating engine exposed to the temperature control valve sensing unit?

- A) Oil cooler inlet.
- B) Engine outlet.
- C) Engine inlet.

426. K02P AMP

The purpose of directing bleed air to the outer turbine case on some engines is to

- A) provide optimum turbine blade tip clearance by controlling thermal expansion.
- B) provide up to 100 percent kinetic energy extraction from the flowing gases.

C) allow operation in a thermal environment 600 to 800 °F above the temperature limits of turbine blade and vane alloys.

427. K03P AMP

In order to maintain a constant oil pressure as the clearances between the moving parts of an engine increase through normal wear, the supply pump output

- A) increases as the resistance offered to the flow of oil increases.
- B) remains relatively constant (at a given RPM) with less oil being returned to the pump inlet by the relief valve.
- C) remains relatively constant (at a given RPM) with more oil being returned to the pump inlet by the relief valve.

428. K03P AMP

In a reciprocating engine, oil is directed from the pressure relief valve to the inlet side of the

- A) scavenger pump.
- B) oil temperature regulator.
- C) pressure pump.

429. K03P AMP

An engine lubrication system pressure relief valve is usually located between the

- A) oil cooler and the scavenger pump.
- B) scavenger pump and the external oil system.
- C) pump and the internal oil system.

430. K03P AMP

The primary source of oil contamination in a normally operating reciprocating engine is

- A) metallic deposits as a result of engine wear.
- B) atmospheric dust and pollution.
- C) combustion deposits due to combustion chamber blow by and oil migration on the cylinder walls.

431. K03P AMP

A drop in oil pressure may be caused by

- A) the temperature regulator sticking open.
- B) the bypass valve sticking open.
- C) foreign material under the relief valve.

432. K03P AMP

The main oil filters strain the oil at which point in the system?

- A) Immediately after it leaves the scavenger pump.

B) Immediately before it enters the pressure pump.

C) Just as it leaves the pressure pump.

433. K03P AMP

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

A) Bypass.

B) Relief.

C) Check.

434. K03P AMP

An oil tank having a capacity of 5 gallons must have an expansion space of

A) 2 quarts.

B) 4 quarts.

C) 5 quarts.

435. K03P 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.

436. K03P AMP

Why is expansion space required in an engine oil supply tank?

A) To eliminate oil foaming.

B) For oil enlargement and collection of foam.

C) For proper oil tank ventilation.

437. K03P AMP

The purpose of a dwell chamber in a turbine engine oil tank is to provide

A) a collection point for sediments.

B) for a pressurized oil supply to the oil pump inlet.

C) separation of entrained air from scavenged oil.

438. K03P AMP

Which of the following bearing types must be continuously lubricated by pressure oil?

A) Ball.

B) Roller.

C) Plain.

439. K03P AMP

The purpose of a relief valve installed in the tank venting system of a turbine engine oil tank is to

A) prevent oil pump cavitation by maintaining a constant pressure on the oil pump inlet.

B) maintain internal tank air pressure at the ambient atmospheric level regardless of altitude or rate of change in altitude.

C) maintain a positive internal pressure in the oil tank after shutdown to prevent oil pump cavitation on engine start.

440. K03P AMP

From the following, identify the factor that has the least effect on the oil consumption of a specific engine.

A) Mechanical efficiency.

B) Engine RPM.

C) Lubricant characteristics.

441. K03P AMP

Under which of the following conditions is the oil cooler flow control valve open on a reciprocating engine?

A) When the temperature of the oil returning from the engine is too high.

B) When the temperature of the oil returning from the engine is too low.

C) When the scavenger pump output volume exceeds the engine pump input volume.

442. K03P 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.

443. K03P AMP

In which of the following situations will the oil cooler automatic bypass valve be open the greatest amount?

A) Engine oil above normal operating temperature.

B) Engine oil below normal operating temperature.

C) Engine stopped with no oil flowing after runup.

444. K03P AMP

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

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

445. K03P AMP

The basic oil pressure relief valve setting for a newly overhauled engine is made

- A) within the first 30 seconds of engine operation.
- B) when the oil is at a higher than normal temperature to assure high oil pressure at normal oil temperature.
- C) in the overhaul shop.

446. K03P AMP

Where is the oil temperature bulb located on a dry sump reciprocating engine?

- A) Oil inlet line.
- B) Oil cooler.
- C) Oil outlet line.

447. K03P 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.

448. K03P 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.

449. K03P AMP

(1) Wet sump oil systems are most commonly used in gas turbine engines.

(2) In most turbine engine oil tanks, a slight pressurization of the tank is desired to ensure a positive flow of oil.

Regarding the above statements,

- A) both No. 1 and No. 2 are true.
- B) only No. 2 is true.

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

450. K03P AMP

Why is an aircraft reciprocating engine oil tank on a dry sump lubrication system equipped with a vent line?

- A) To prevent pressure buildup in the reciprocating engine crankcase.
- B) To eliminate foaming in the oil tank.
- C) To prevent pressure buildup in the oil tank.

451. K03P AMP

Where are sludge chambers, when used in aircraft engine lubrication systems, usually located?

- A) In the crankshaft throws.
- B) Adjacent to the scavenger pumps.
- C) In the oil storage tank.

452. K03P 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.

453. K03P AMP

What is the primary purpose of the hopper located in the oil supply tank of some dry sump engine installations?

- A) To reduce the time required to warm the oil to operating temperatures.
- B) To reduce surface aeration of the hot oil and thus reduce oxidation and the formation of sludge and varnish.
- C) To impart a centrifugal motion to the oil entering the tank so that the foreign particles in the oil will separate more readily.

454. K03P AMP

What determines the minimum particle size which will be excluded or filtered by a cuno type (stacked disc, edge filtration) filter?

- A) The disc thickness.
- B) The spacer thickness.
- C) Both the number and thickness of the discs in the assembly.

455. K03P AMP

What is the primary purpose of changing aircraft engine lubricating oils at predetermined periods?

- A) The oil becomes diluted with gasoline washing past the pistons into the crankcase.
- B) The oil becomes contaminated with moisture, acids, and finely divided suspended solid particles.
- C) Exposure to heat and oxygen causes a decreased ability to maintain a film under load.

456. K03P AMP

The pumping capacity of the scavenger pump in a dry sump aircraft engine's lubrication system

- A) is greater than the capacity of the oil supply pump.
- B) is less than the capacity of the oil supply pump.
- C) is usually equal to the capacity of the oil supply pump in order to maintain constant oiling conditions.

457. L01P AMP

The purpose of a safety gap in a magneto is to

- A) prevent burning out the primary winding.
- B) protect the high voltage winding from damage.
- C) prevent burning of contact points.

458. L01P AMP

In a high tension ignition system, the current in the magneto secondary winding is

- A) conducted from the primary winding via the discharge of the capacitor.
- B) induced when the primary circuit is interrupted.
- C) induced when the primary circuit discharges via the breaker points.

459. L01P 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.

460. L01P 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.

461. L01P AMP

When the switch is off in a battery ignition system, the primary circuit is

- A) grounded.

B) opened.

C) shorted.

462. L01P 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.

463. L01P AMP

In an aircraft ignition system, one of the functions of the capacitor is to

A) regulate the flow of current between the primary and secondary coil.

B) facilitate a more rapid collapse of the magnetic field in the primary coil.

C) stop the flow of magnetic lines of force when the points open.

464. L01P AMP

What components make up the magnetic system of a magneto?

A) Pole shoes, the pole shoe extensions, and the primary coil.

B) Primary and secondary coils.

C) Rotating magnet, the pole shoes, the pole shoe extensions, and the coil core.

465. L01P AMP

When timing a magneto internally, the alignment of the timing marks indicates that the

A) breaker points are just closing.

B) magnets are in the neutral position.

C) magnets are in the E gap position.

466. L01P 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.

467. L01P AMP

When a 'Shower of Sparks' ignition system is activated at an engine start, a spark plug fires

A) as soon as the advance breaker points open.

B) only while both the retard and advance breaker points are closed.

C) only while both the retard and advance breaker points are open.

468. L01P 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.

469. L01P AMP

How many secondary coils are required in a low tension ignition system on an 18 cylinder engine?

- A) 36.
- B) 18.
- C) 9.

470. L02P AMP

Why do turbine engine ignition systems require high energy?

- A) To ignite the fuel under conditions of high altitude and high temperatures.
- B) Because the applied voltage is much greater.
- C) To ignite the fuel under conditions of high altitude and low temperatures.

471. L02P 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.

472. L02P AMP

Which of the following are distinct circuits of a high tension magneto?

- 1. Magnetic.
  - 2. Primary.
  - 3. E gap.
  - 4. P lead.
  - 5. Secondary.
- A) 1, 2, 5.
  - B) 1, 3, 4.
  - C) 2, 4, 5.

473. L02P AMP

How does high tension ignition shielding tend to reduce radio interference?

- A) Prevents ignition flashover at high altitudes.
- B) Reduces voltage drop in the transmission of high tension current.
- C) Receives and grounds high frequency waves coming from the magneto and high tension ignition leads.

474. L02P AMP

Which of the following are advantages of dual ignition in aircraft engines?

- 1. Gives a more complete and quick combustion of the fuel.
  - 2. Provides a backup magneto system.
  - 3. Increases the output power of the engine.
  - 4. Permits the use of lower grade fuels.
  - 5. Increases the intensity of the spark at the spark plugs.
- A) 2, 3, 4.
  - B) 2, 3, 5.
  - C) 1, 2, 3.

475. L02P AMP

If the ground wire of a magneto is disconnected at the ignition switch, the result will be the

- A) affected magneto will be isolated and the engine will run on the opposite magneto.
- B) engine will stop running.
- C) engine will not stop running when the ignition switch is turned off.

476. L02P AMP

Ignition check during engine runup indicates a slow drop in RPM. This is usually caused by

- A) defective spark plugs.
- B) a defective high tension lead.
- C) incorrect ignition timing or valve adjustment.

477. L02P AMP

What is the approximate position of the rotating magnet in a high tension magneto when the points first close?

- A) Full register.
- B) Neutral.
- C) A few degrees after neutral.

478. L02P AMP

What component of a dual magneto is shared by both ignition systems?

- A) High tension coil.
- B) Rotating magnet.
- C) Capacitor.

479. L02P AMP

Spark plug fouling caused by lead deposits occurs most often

- A) during cruise with rich mixture.
- B) when cylinder head temperatures are relatively low.
- C) when cylinder head temperatures are high.

480. L02P AMP

Using a cold spark plug in a high-compression aircraft engine would probably result in

- A) normal operation.
- B) a fouled plug.
- C) detonation.

481. L02P AMP

If new breaker points are installed in a magneto on an engine, it will be necessary to time the

- A) magneto internally and the magneto to the engine.
- B) breaker points to the No. 1 cylinder.
- C) magneto drive to the engine.

482. L02P AMP

Ignition check during engine runup indicates excessive RPM drop during operation on the right magneto. The major portion of the RPM loss occurs rapidly after switching to the right magneto position (fast drop). The most likely cause is

- A) faulty or fouled spark plugs.
- B) incorrect ignition timing on both magnetos.
- C) one or more dead cylinders.

483. L02P AMP

Spark plug heat range is determined by

- A) the reach of the spark plug.
- B) its ability to transfer heat to the cylinder head.
- C) the number of ground electrodes.

484. L02P 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.

485. L02P 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.

486. L02P AMP

A spark plug is fouled when

- A) its spark grounds by jumping electrodes.
- B) it causes preignition.
- C) its spark grounds without jumping electrodes.

487. L02P AMP

Defective spark plugs will cause the engine to run rough at

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

488. L02P AMP

When performing a magneto ground check on an engine, correct operation is indicated by

- A) a slight increase in RPM.
- B) no drop in RPM.
- C) a slight drop in RPM.

489. L02P AMP

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

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

490. L04P AMP

A safety feature usually employed in pneumatic starters that is used to prevent the starter from reaching burst speed if inlet air does not terminate on schedule is the

- A) drive shaft shear point.
- B) stator nozzle design that chokes airflow and stabilizes turbine wheel speed.
- C) spring coupling release.

491. L04P AMP

A safety feature usually employed in pneumatic starters that is used if the clutch does not release from the engine drive at the proper time during start is the

- A) flyweight cutout switch.
- B) spring coupling release.
- C) drive shaft shear point.

492. L04P AMP

Airflow to the pneumatic starter from a ground unit is normally prevented from causing starter overspeed during engine start by

- A) stator nozzle design that chokes airflow and stabilizes turbine wheel speed.
- B) activation of a flyweight cutout switch.
- C) a preset timed cutoff of the airflow at the source.

493. L04P AMP

Air turbine starters are generally designed so that reduction gear distress or damage may be detected by

- A) characteristic sounds from the starter assembly during engine start.
- B) breakage of a shear section on the starter drive shaft.
- C) inspection of a magnetic chip detector.

494. L04P 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.

495. L04P AMP

Pneumatic starters are usually designed with what types of airflow impingement systems?

- A) Radial inward flow turbine and axial-flow turbine.
- B) Centrifugal compressor and axial-flow compressor.
- C) Double entry centrifugal outward flow and axial-flow turbines.

496. L04P 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.

497. L04P AMP

The primary advantage of pneumatic (air turbine) starters over comparable electric starters for turbine engines is

- A) a decreased fire hazard.
- B) reduction gearing not required.
- C) high power-to-weight ratio.

498. L03P 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.)

499. L02P AMP

At what RPM is a reciprocating engine ignition switch check made?

- A) 1,500 RPM.
- B) The slowest possible RPM.
- C) Full throttle RPM.

500. L02P AMP

Which of the following statements most accurately describes spark plug heat range?

- A) The length of the threaded portion of the shell usually denotes the spark plug heat range.
- B) A hot plug is designed so that the insulator tip is reasonably short to hasten the rate of heat transfer from the tip through the spark plug shell to the cylinder head.
- C) A cold plug is designed so that the insulator tip is reasonably short to hasten the rate of heat transfer from the tip through the spark plug shell to the cylinder head.

501. L03P AMP

The purpose of an under current relay in a starter-generator system is to

- A) provide a backup for the starter relay.
- B) disconnect power from the starter-generator and ignition when sufficient engine speed is reached.

C) keep current flow to the starter-generator under the circuit capacity maximum.

502. L03P AMP

(Refer to Powerplant figure 5.) When an external power source is connected to the aircraft,

- A) the battery cannot be connected to the bus.
- B) both battery power and external power are available to the bus.
- C) the start relay coil has a path to ground.

503. L03P 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.

504. L02P AMP

The secondary coil of a magneto is grounded through the

- A) ignition switch.
- B) primary coil.
- C) grounded side of the breaker points.

505. L02P AMP

What would be the result if a magneto breaker point mainspring did not have sufficient tension?

- A) The points will stick.
- B) The points will not open to the specified gap.
- C) The points will float or bounce.

506. L03P 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).

507. L02P AMP

Which of the following breaker point characteristics is associated with a faulty capacitor?

- A) Crowned.
- B) Fine grained.
- C) Coarse grained.

508. L02P AMP

What likely effect would a cracked distributor rotor have on a magneto?

- A) Ground the secondary circuit through the crack.
- B) Fire two cylinders simultaneously.
- C) Ground the primary circuit through the crack.

509. L02P 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.

510. L02P AMP

What will be the effect if the spark plugs are gapped too wide?

- A) Insulation failure.
- B) Hard starting.
- C) Lead damage.

511. L02P AMP

A certain nine cylinder radial engine used a noncompensated single unit, dual type magneto with a four pole rotating magnet and separately mounted distributors. Which of the following will have the lowest RPM at any given engine speed?

- A) Breaker cam.
- B) Engine crankshaft.
- C) Distributors.

512. L02P AMP

In a low tension ignition system, each spark plug requires an individual

- A) capacitor.
- B) breaker assembly.
- C) secondary coil.

513. L02P AMP

The capacitor type ignition system is used almost universally on turbine engines primarily because of its high voltage and

- A) low amperage.
- B) long life.
- C) high heat intensity.

514. L01P AMP

The amount of voltage generated in any magneto secondary coil is determined by the number of windings and by the

- A) rate of buildup of the magnetic field around the primary coil.
- B) rate of collapse of the magnetic field around the primary coil.
- C) amount of charge released by the capacitor.

515. L02P AMP

If it is found that a shielded ignition system does not adequately reduce ignition noise, it may be necessary to install

- A) a second layer of shielding.
- B) a filter between the magneto and magneto switch.
- C) bonding wires from the shielding to ground.

516. L01P AMP

What is the difference between a low tension and a high tension engine ignition system?

- A) A low tension system produces relatively low voltage at the spark plug as compared to a high tension system.
- B) A high tension system is designed for high altitude aircraft, while a low tension system is for low to medium altitude aircraft.
- C) A low tension system uses a transformer coil near the spark plugs to boost voltage, while the high tension system voltage is constant from the magneto to the spark plugs.

517. L01P 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).

518. L01P 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.

519. L01P AMP

Aircraft magneto housings are usually ventilated in order to

- A) prevent the entrance of outside air which may contain moisture.

- B) allow heated air from the accessory compartment to keep the internal parts of the magneto dry.
- C) provide cooling and remove corrosive gases produced by normal arcing.

520. L01P AMP

The purpose of staggered ignition is to compensate for

- A) short ignition harness.
- B) rich fuel/air mixture around exhaust valve.
- C) diluted fuel/air mixture around exhaust valve.

521. L01P AMP

What is the purpose of using an impulse coupling with a magneto?

- A) To absorb impulse vibrations between the magneto and the engine.
- B) To compensate for backlash in the magneto and the engine gears.
- C) To produce a momentary high rotational speed of the magneto.

522. L01P 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.

523. L01P AMP

The spark is produced in a magneto ignition system when the breaker points are

- A) fully open.
- B) beginning to open.
- C) fully closed.

524. L02P AMP

In a turbine engine dc capacitor discharge ignition system, where are the high voltage pulses formed?

- A) At the breaker.
- B) At the triggering transformer.
- C) At the rectifier.

525. L01P AMP

What is the purpose of a safety gap in some magnetos?

- A) To discharge the secondary coil's voltage if an open occurs in the secondary circuit.
- B) To ground the magneto when the ignition switch is off.

C) To prevent flashover in the distributor.

526. L02P AMP

In a high tension ignition system, a primary capacitor of too low a capacity will cause

- A) excessive primary voltage.
- B) excessively high secondary voltage.
- C) the breaker contacts to burn.

527. L01P 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.

528. L02P AMP

Which of the following statements regarding magneto switch circuits is NOT true?

- A) In the BOTH position, the right and left magneto circuits are grounded.
- B) In the OFF position, neither the right nor left magneto circuits are open.
- C) In the RIGHT position, the right magneto circuit is open and the left magneto circuit is grounded.

529. L02P AMP

Hot spark plugs are generally used in aircraft powerplants

- A) with comparatively high compression or high operating temperatures.
- B) with comparatively low operating temperatures.
- C) which produce high power per cubic inch displacement.

530. L02P AMP

(1) The platinum and iridium ground electrodes used on fine wire spark plugs are extremely brittle and can be broken if they are improperly handled or adjusted.

(2) When gapping massive-electrode spark plugs, a wire gauge should be inserted between the center and ground electrodes while moving the ground electrode in order to avoid setting the gap too close.

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.

531. L02P AMP

The term 'reach,' as applied to spark plug design and/or type, indicates the

- A) linear distance from the shell gasket seat to the end of the threads on the shell skirt.
- B) length of center electrode exposed to the flame of combustion.
- C) length of the shielded barrel.

532. L02P AMP

If staggered ignition timing is used, the

- A) spark plug nearest the exhaust valve will fire first.
- B) spark will be automatically advanced as engine speed increases.
- C) spark plug nearest the intake valve will fire first.

533. L02P 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.

534. L02P AMP

When the ignition switch of a single (reciprocating) engine aircraft is turned to the OFF position,

- A) the primary circuits of both magnetos are grounded.
- B) the secondary circuits of both magnetos are opened.
- C) all circuits are automatically opened.

535. L02P AMP

Thermocouples are usually inserted or installed on the

- A) front cylinder of the engine.
- B) rear cylinder of the engine.
- C) hottest cylinder of the engine.

536. L02P 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.

537. L02P AMP

Capacitance afterfiring of a spark plug is caused by

- A) the stored energy in the ignition shielded lead unloading after normal timed ignition.

B) excessive center electrode erosion.

C) constant polarity firing.

538. L02P 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.

539. L02P AMP

Which of the following could cause damage to the nose ceramic or to the electrode of an aircraft spark plug?

A) Plug installed without a copper gasket.

B) Improper gapping procedure.

C) Excessive magneto voltage.

540. L02P 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.

541. L02P AMP

The electrical circuit from the spark plug back to the magneto is completed by grounding through the

A) engine structure.

B) P-lead.

C) cockpit switch.

542. L02P 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.

543. L02P AMP

Great caution should be exercised in handling damaged hermetically sealed turbine engine igniter transformer units because

A) compounds in the unit may become a fire or explosion hazard when exposed to the air.

B) some contain radioactive material.

C) some contain toxic chemicals.

544. L02P AMP

Generally, when removing a turbine engine igniter plug, in order to eliminate the possibility of the technician receiving a lethal shock, the ignition switch is turned off and

A) disconnected from the power supply circuit.

B) the igniter lead is disconnected from the plug and the center electrode grounded to the engine after disconnecting the transformer-exciter input lead and waiting the prescribed time.

C) the transformer exciter input lead is disconnected and the center electrode grounded to the engine after disconnecting the igniter lead from the plug and waiting the prescribed time.

545. L02P AMP

What should be used to clean grease or carbon tracks from capacitors or coils that are used in magnetos?

A) Solvent.

B) Acetone.

C) Naphtha.

546. L02P AMP

The constrained gap igniter plug used in some gas turbine engines operates at a cooler temperature because

A) it projects into the combustion chamber.

B) the applied voltage is less.

C) the construction is such that the spark occurs beyond the face of the combustion chamber liner.

547. L02P AMP

Why are turbine engine igniters less susceptible to fouling than reciprocating engine spark plugs?

A) The high intensity spark cleans the igniter.

B) The frequency of the spark is less for igniters.

C) Turbine igniters operate at cooler temperatures.

548. L02P 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.

549. L02P AMP

When does battery current flow through the primary circuit of a battery ignition coil?

- A) Only when the breaker points are open.
- B) At all times when the ignition switch is on.
- C) When the breaker points are closed and the ignition switch is on.

550. L02P 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.

551. L01P AMP

When a magneto is disassembled, keepers are usually placed across the poles of the rotating magnet to reduce the loss of magnetism. These keepers are usually made of

- A) chrome magnet steel.
- B) soft iron.
- C) cobalt steel.

552. L01P AMP

What will be the results of increasing the gap of the breaker points in a magneto?

- A) Retard the spark and increase its intensity.
- B) Advance the spark and decrease its intensity.
- C) Retard the spark and decrease its intensity.

553. L02P AMP

How are most radial engine spark plug wires connected to the distributor block?

- A) By use of cable piercing screws.
- B) By use of self locking cable ferrules.
- C) By use of terminal sleeves and retaining nuts.

554. L01P AMP

How is the strength of a magneto magnet checked?

- A) Hold the points open and check the output of the primary coil with an ac ammeter while operating the magneto at a specified speed.
- B) Check the ac voltage reading at the breaker points.
- C) Check the output of the secondary coil with an ac ammeter while operating the magneto at a specified speed.

555. L01P AMP

The E gap angle is usually defined as the number of degrees between the neutral position of the rotating magnet and the position

- A) where the contact points close.
- B) where the contact points open.
- C) of greatest magnetic flux density.

556. L01P AMP

Magneto breaker point opening relative to the position of the rotating magnet and distributor rotor (internal timing) can be set most accurately

- A) during the magneto to engine timing operation.
- B) during assembly of the magneto before installation on the engine.
- C) by setting the points roughly at the required clearance before installing the magneto and then making the fine breaker point adjustment after installation to compensate for wear in the magneto drive train.

557. M03P AMP

Which statement is correct regarding a continuous flow fuel injection system used on many reciprocating engines?

- A) Fuel is injected directly into each cylinder.
- B) Fuel is injected at each cylinder intake port.
- C) Two injector nozzles are used in the injector fuel system for various speeds.

558. M03P AMP

During the operation of an aircraft engine, the pressure drop in the carburetor venturi depends primarily upon the

- A) air temperature.
- B) barometric pressure.
- C) air velocity.

559. M02P AMP

The device that controls the volume of the fuel/air mixture to the cylinders is called a

- A) mixture control.
- B) metering jet.
- C) throttle valve.

560. M02P AMP

The device that controls the ratio of the fuel/air mixture to the cylinders is called a

- A) throttle valve.

B) mixture control.

C) metering jet.

561. M03P AMP

Which of the following causes a single diaphragm accelerator pump to discharge fuel?

A) An increase in venturi suction when the throttle valve is open.

B) An increase in manifold pressure that occurs when the throttle valve is opened.

C) A decrease in manifold pressure that occurs when the throttle valve is opened.

562. M03P AMP

At what engine speed does the main metering jet actually function as a metering jet in a float type carburetor?

A) All RPM's.

B) Cruising RPM only.

C) All RPM's above idle range.

563. M03P AMP

What is the purpose of the carburetor accelerating system?

A) Supply and regulate the fuel required for engine speeds above idle.

B) Temporarily enrich the mixture when the throttle is suddenly opened.

C) Supply and regulate additional fuel required for engine speeds above cruising.

564. M03P AMP

Which of the following is least likely to occur during operation of an engine equipped with a direct cylinder fuel injection system?

A) Afterfiring.

B) Kickback during start.

C) Backfiring.

565. M03P 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.

566. M03P AMP

What is the relationship between the accelerating pump and the enrichment valve in a pressure injection carburetor?

A) No relationship since they operate independently.

- B) Unmetered fuel pressure affects both units.
- C) The accelerating pump actuates the enrichment valve.

567. M03P AMP

What carburetor component actually limits the desired maximum airflow to the engine at full throttle?

- A) Throttle valve.
- B) Venturi.
- C) Manifold intake.

568. M03P AMP

What is the relationship between the pressure existing within the throat of a venturi and the velocity of the air passing through the venturi?

- A) There is no direct relationship between the pressure and the velocity.
- B) The pressure is directly proportional to the velocity.
- C) The pressure is inversely proportional to the velocity.

569. M02P AMP

When air passes through the venturi of a carburetor, what three changes occur?

- A) Velocity increases, temperature increases, and pressure decreases.
- B) Velocity decreases, temperature increases, and pressure increases.
- C) Velocity increases, temperature decreases, and pressure decreases.

570. M02P AMP

Select the correct statement concerning the idle system of a conventional float type carburetor.

- A) The low pressure area created in the throat of the venturi pulls the fuel from the idle passage.
- B) Climatic conditions have very little effect on idle mixture requirements.
- C) The low pressure between the edges of the throttle valve and the throttle body pulls the fuel from the idle passage.

571. M02P AMP

The economizer system of a float type carburetor performs which of the following functions?

- A) It supplies and regulates the fuel required for all engine speeds.
- B) It supplies and regulates the additional fuel required for all engine speeds above cruising.
- C) It regulates the fuel required for all engine speeds and all altitudes.

572. M02P AMP

How will the mixture of an engine be affected if the bellows of the automatic mixture control (AMC) in a pressure carburetor ruptures while the engine is operating at altitude?

- A) It will become leaner.

B) No change will occur until the altitude changes.

C) It will become richer.

573. M02P AMP

The fuel level within the float chamber of a properly adjusted float type carburetor will be

A) slightly higher than the discharge nozzle outlet.

B) slightly lower than the discharge nozzle outlet.

C) at the same level as the discharge nozzle outlet.

574. M02P AMP

The metered fuel pressure (chamber C) in an injection type carburetor

A) is held constant throughout the entire engine operating range.

B) varies according to the position of the poppet valve located between chamber D (unmetered fuel) and chamber E (engine driven fuel pump pressure).

C) will be approximately equal to the pressure in chamber A (impact pressure).

575. M02P AMP

Select the statement which is correct relating to a fuel level check of a float type carburetor.

A) Use 5 pounds fuel pressure for the test if the carburetor is to be used in a gravity fuel feed system.

B) Block off the main and idle jets to prevent a continuous flow of fuel through the jets.

C) Do not measure the level at the edge of the float chamber.

576. M02P AMP

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

A) Economizer valve.

B) Automatic mixture control.

C) Venturi.

577. M02P AMP

Where is the throttle valve located on a float type carburetor?

A) Between the venturi and the discharge nozzle.

B) After the main discharge nozzle and venturi.

C) After the venturi and just before the main discharge nozzle.

578. M02P 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.

579. M02P AMP

What component is used to ensure fuel delivery during periods of rapid engine acceleration?

- A) Acceleration pump.
- B) Water injection pump.
- C) Power enrichment unit.

580. M03P AMP

The desired engine idle speed and mixture setting

- A) is adjusted with engine warmed up and operating.
- B) should give minimum RPM with maximum manifold pressure.
- C) is usually adjusted in the following sequence; speed first, then mixture.

581. M02P 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.

582. M02P AMP

Which of the following is NOT a function of the carburetor venturi?

- A) Proportions the fuel/air mixture.
- B) Regulates the idle system.
- C) Limits the airflow at full throttle.

583. M02P AMP

Idle cutoff is accomplished on a carburetor equipped with a back suction mixture control by

- A) introducing low pressure (intake manifold) air into the float chamber.
- B) turning the fuel selector valve to OFF.
- C) the positive closing of a needle and seat.

584. M02P AMP

One purpose of an air bleed in a float type carburetor is to

- A) increase fuel flow at altitude.
- B) meter air to adjust the mixture.

C) decrease fuel density and destroy surface tension.

585. M02P AMP

To determine the float level in a float type carburetor, a measurement is usually made from the top of the fuel in the float chamber to the

- A) parting surface of the carburetor.
- B) top of the float.
- C) centerline of the main discharge nozzle.

586. M02P AMP

The throttle valve of float type aircraft carburetors is located

- A) ahead of the venturi and main discharge nozzle.
- B) after the main discharge nozzle and ahead of the venturi.
- C) between the venturi and the engine.

587. M02P 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.

588. M02P AMP

If a float type carburetor leaks fuel when the engine is stopped, a likely cause is that the

- A) float needle valve is worn or otherwise not seated properly.
- B) float level is adjusted too low.
- C) main air bleed is clogged.

589. M04P 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.

590. M04P AMP

An excessively lean fuel/air mixture may cause

- A) an increase in cylinder head temperature.
- B) high oil pressure.

C) backfiring through the exhaust.

591. M04P 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.

592. M04P AMP

A mixture ratio of 11:1 normally refers to

- A) 1 part fuel to 11 parts air.
- B) a stoichiometric mixture.
- C) 1 part air to 11 parts fuel.

593. M04P 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.

594. M04P AMP

A carburetor is prevented from leaning out during quick acceleration by the

- A) power enrichment system.
- B) mixture control system.
- C) accelerating system.

595. M04P 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.

596. M04P AMP

When a new carburetor is installed on an engine,

- A) warm up the engine and adjust the float level.

- B) do not adjust the idle mixture setting; this was accomplished on the flow bench.
- C) and the engine is warmed up to normal temperatures, adjust the idle mixture, then the idle speed.

597. M04P 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.

598. M04P AMP

What could cause a lean mixture and high cylinder head temperature at sea level or low altitudes?

- A) Mixture control valve fully closed.
- B) Automatic mixture control stuck in the extended position.
- C) Defective accelerating system.

599. M04P AMP

Detonation occurs when the fuel/air mixture

- A) burns too fast.
- B) ignites before the time of normal ignition.
- C) is too rich.

600. M04P AMP

What corrective action should be taken when a carburetor is found to be leaking fuel from the discharge nozzle?

- A) Replace the needle valve and seat.
- B) Raise the float level.
- C) Turn the fuel off each time the aircraft is parked.

601. M04P AMP

A major difference between the Teledyne-Continental and RSA (Precision Airmotive or Bendix) continuous flow fuel injection systems in fuel metering is that the

- A) RSA system uses air pressure only as a metering force.
- B) Continental system utilizes airflow as a metering force.
- C) Continental system uses fuel pressure only as a metering force.

602. M04P AMP

The function of the altitude compensating, or aneroid valve used with the Teledyne-Continental fuel injection system on many turbocharged engines is to

- A) prevent an overly rich mixture during sudden acceleration.

- B) prevent detonation at high altitudes.
- C) provide a means of enriching the mixture during sudden acceleration.

603. M04P 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.

604. M02P AMP

Which of the following best describes the function of an altitude mixture control?

- A) Regulates the richness of the fuel/air charge entering the engine.
- B) Regulates the air pressure above the fuel in the float chamber.
- C) Regulates the air pressure in the venturi.

605. M04P AMP

Under which of the following conditions would an engine run lean even though there is a normal amount of fuel present?

- A) The use of too high an octane rating fuel.
- B) Incomplete fuel vaporization.
- C) The carburetor air heater valve in the HOT position.

606. M03P 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.

607. M03P AMP

If the volume of air passing through a carburetor venturi is reduced, the pressure at the venturi throat will

- A) decrease.
- B) be equal to the pressure at the venturi outlet.
- C) increase.

608. M04P 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.

609. M04P AMP

What will occur if the vapor vent float in a pressure carburetor loses its buoyancy?

- A) The amount of fuel returning to the fuel tank from the carburetor will be increased.
- B) The engine will continue to run after the mixture control is placed in IDLE CUTOFF.
- C) A rich mixture will occur at all engine speeds.

610. M04P AMP

What method is ordinarily used to make idle speed adjustments on a float type carburetor?

- A) An adjustable throttle stop or linkage.
- B) An orifice and adjustable tapered needle.
- C) An adjustable needle in the drilled passageway which connects the airspace of the float chamber and the carburetor venturi.

611. M04P AMP

For what primary purpose is a turbine engine fuel control unit trimmed?

- A) To obtain maximum thrust output when desired.
- B) To properly position the power levers.
- C) To adjust the idle RPM.

612. M04P AMP

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

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

613. M04P AMP

(1) The mixture used at rated power in air cooled reciprocating engines is richer than the mixture used through the normal cruising range.

(2) The mixture used at idle in air cooled reciprocating engines is richer than the mixture used at rated power.

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.

614. M04P AMP

An aircraft engine equipped with a pressure type carburetor is started with the

- A) primer while the mixture control is positioned at IDLE CUTOFF.
- B) mixture control in the FULL RICH position.
- C) primer while the mixture control is positioned at the FULL LEAN position.

615. M04P AMP

An indication that the optimum idle mixture has been obtained occurs when the mixture control is moved to IDLE CUTOFF and manifold pressure

- A) decreases momentarily and RPM drops slightly before the engine ceases to fire.
- B) increases momentarily and RPM drops slightly before the engine ceases to fire.
- C) decreases and RPM increases momentarily before the engine ceases to fire.

616. M04P AMP

The use of less than normal throttle opening during starting will cause

- A) a rich mixture.
- B) a lean mixture.
- C) backfire due to lean fuel/air ratio.

617. M04P AMP

When checking the idle mixture on a carburetor, the engine should be idling normally, then pull the mixture control toward the IDLE CUTOFF position. A correct idling mixture will be indicated by

- A) an immediate decrease in RPM.
- B) a decrease of 20 to 30 RPM before quitting.
- C) an increase of 10 to 50 RPM before decreasing.

618. M04P AMP

The purpose of the back suction mixture control in a float type carburetor is to adjust the mixture by

- A) regulating the pressure drop at the venturi.
- B) regulating the pressure on the fuel in the float chamber.
- C) regulating the suction on the mixture from behind the throttle valve.

619. M04P AMP

Reciprocating engine power will be decreased at all altitudes if the

- A) air density is increased.
- B) humidity is increased.
- C) manifold pressure is increased.

620. M03P 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.

621. M04P 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.

622. M01P AMP

In order to stabilize cams, springs, and linkages within the fuel control, manufacturers generally recommend that all final turbine engine trim adjustments be made in the

- A) increase direction.
- B) decrease direction.
- C) decrease direction after over-adjustment.

623. M02P AMP

What occurs when a back suction type mixture control is placed in IDLE CUTOFF?

- A) The fuel passages to the main and idle jets will be closed by a valve.
- B) The float chamber will be vented to a negative pressure area.
- C) The fuel passage to the idle jet will be closed by a valve.

624. M01P AMP

When trimming a turbine engine, the fuel control is adjusted to

- A) produce as much power as the engine is capable of producing.
- B) set idle RPM and maximum speed or EPR.
- C) allow the engine to produce maximum RPM without regard to power output.

625. M01P AMP

A supervisory electronic engine control (EEC) is a system that receives engine operating information and

- A) adjusts a standard hydromechanical fuel control unit to obtain the most effective engine operation.
- B) develops the commands to various actuators to control engine parameters.
- C) controls engine operation according to ambient temperature, pressure, and humidity.

626. M01P AMP

A full-authority electronic engine control (EEC) is a system that receives all the necessary data for engine operation and

- A) adjusts a standard hydromechanical fuel control unit to obtain the most effective engine operation.
- B) develops the commands to various actuators to control engine parameters.
- C) controls engine operation according to ambient temperature, pressure, and humidity.

627. M01P 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.

628. M01P AMP

What should be checked/changed to ensure the validity of a turbine engine performance check if an alternate fuel is to be used?

- A) Fuel specific gravity setting.
- B) Maximum RPM adjustment.
- C) EPR gauge calibration.

629. M01P 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.

630. M01P AMP

An aircraft should be facing into the wind when trimming an engine. However, if the velocity of the wind blowing into the intake is excessive, it is likely to cause a

- A) false low exhaust gas temperature reading.
- B) trim setting resulting in engine overspeed.
- C) false high compression and turbine discharge pressure, and a subsequent low trim.

631. M01P 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.

632. M02P AMP

A reciprocating engine automatic mixture control responds to changes in air density caused by changes in

A) altitude or humidity.

B) altitude only.

C) altitude or temperature.

633. M02P AMP

If a float type carburetor becomes flooded, the condition is most likely caused by

A) a leaking needle valve and seat assembly.

B) the accelerating pump shaft being stuck.

C) a clogged back suction line.

634. M02P AMP

On a float type carburetor, the purpose of the economizer valve is to

A) provide extra fuel for sudden acceleration of the engine.

B) maintain the leanest mixture possible during cruising best power.

C) provide a richer mixture and cooling at maximum power output.

635. M02P 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.

636. M02P AMP

Float type carburetors which are equipped with economizers are normally set for

A) their richest mixture delivery and leaned by means of the economizer system.

B) the economizer system to supplement the main system supply at all engine speeds above idling.

C) their leanest practical mixture delivery at cruising speeds and enriched by means of the economizer system at higher power settings.

637. M02P AMP

If an aircraft engine is equipped with a carburetor that is not compensated for altitude and temperature variations, the fuel/air mixture will become

- A) leaner as either the altitude or temperature increases.
- B) richer as the altitude increases and leaner as the temperature increases.
- C) richer as either the altitude or temperature increases.

638. M02P AMP

The back suction mixture control system operates by

- A) varying the pressure within the venturi section.
- B) varying the pressure acting on the fuel in the float chamber.
- C) changing the effective cross sectional area of the main metering orifice (jet).

639. M02P AMP

If the main air bleed of a float-type carburetor becomes clogged, the engine will run

- A) lean at rated power.
- B) rich at rated power.
- C) rich at idling.

640. M02P AMP

One of the things a metering orifice in a main air bleed helps to accomplish (at a given altitude) in a carburetor is

- A) pressure in the float chamber to increase as airflow through the carburetor increases.
- B) a progressively richer mixture as airflow through the carburetor increases.
- C) better fuel vaporization and control of fuel discharge, especially at lower engine speeds.

641. M02P 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.

642. M02P AMP

The fuel metering force of a conventional float type carburetor in its normal operating range is the difference between the pressure acting on the discharge nozzle located within the venturi and the pressure

- A) acting on the fuel in the float chamber.
- B) of the fuel as it enters the carburetor.
- C) of the air as it enters the venturi (impact pressure).

643. M02P 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.

644. M02P AMP

A punctured float in a float type carburetor will cause the fuel level to

- A) lower, and enrich the mixture.
- B) rise, and enrich the mixture.
- C) rise, and lean the mixture.

645. N02P AMP

Fuel lines are kept away from sources of heat, and sharp bends and steep rises are avoided to reduce the possibility of

- A) liquid lock.
- B) vapor lock.
- C) positive lock.

646. N02P 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.

647. N02P AMP

Fuel pressure produced by the engine-driven fuel pump is adjusted by the

- A) bypass valve adjusting screw.
- B) relief valve adjusting screw.
- C) engine driven fuel pump adjusting screw.

648. N02P AMP

A fuel pressure relief valve is required on

- A) engine driven diaphragm-type fuel pumps.
- B) engine driven vane type fuel pumps.
- C) centrifugal fuel boost pumps.

649. N02P AMP

A pilot reports that the fuel pressure fluctuates and exceeds the upper limits whenever the throttle is advanced. The most likely cause of the trouble is

- A) a ruptured fuel pump relief valve diaphragm.
- B) a sticking fuel pump relief valve.
- C) an air leak at the fuel pump relief valve body.

650. N02P AMP

Fuel crossfeed systems are used in aircraft to

- A) purge the fuel tanks.
- B) jettison fuel in an emergency.
- C) maintain aircraft stability.

651. N02P AMP

What causes the fuel divider valve to open in a turbine engine duplex fuel nozzle?

- A) Fuel pressure.
- B) Bleed air after the engine reaches idle RPM.
- C) An electrically operated solenoid.

652. N02P AMP

Fuel pump relief valves designed to compensate for atmospheric pressure variations are known as

- A) compensated flow valves.
- B) pressurized relief valves.
- C) balanced type relief valves.

653. N02P AMP

A fuel strainer or filter must be located between the

- A) boost pump and tank outlet.
- B) tank outlet and the fuel metering device.
- C) boost pump and engine driven fuel pump.

654. N02P AMP

If an engine equipped with a float type carburetor backfires or misses when the throttle is advanced, a likely cause is that the

- A) float level is too high.
- B) main air bleed is clogged.
- C) accelerating pump is not operating properly.

655. N02P 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.

656. N02P AMP

What is the purpose of the flow divider in a turbine engine duplex fuel nozzle?

- A) Allows an alternate flow of fuel if the primary flow clogs or is restricted.
- B) Creates the primary and secondary fuel supplies.
- C) Provides a flow path for bleed air which aids in the atomization of fuel.

657. N02P AMP

How often should float carburetors be overhauled?

- A) At engine overhaul.
- B) Annually.
- C) At engine change.

658. N02P AMP

Maximum power is normally considered to be developed in a reciprocating engine with a fuel/air mixture ratio of approximately

- A) 8:1.
- B) 12:1.
- C) 15:1.

659. N02P 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.

660. N01P AMP

Most large aircraft reciprocating engines are equipped with which of the following types of engine driven fuel pumps?

- A) Rotary vane type fuel pump.
- B) Centrifugal type fuel pump.

C) Gear type fuel pump.

661. N02P 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.

662. N02P AMP

Which of the following turbine fuel filters has the greatest filtering action?

- A) Micron.
- B) Small wire mesh.
- C) Stacked charcoal.

663. N01P 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.

664. N01P AMP

The fuel pump relief valve directs excess fuel to the

- A) fuel tank return line.
- B) inlet side of the fuel pump.
- C) inlet side of the fuel strainer.

665. N01P AMP

Which of the following statements concerning a centrifugal type fuel boost pump located in a fuel supply tank is NOT true?

- A) Air and fuel vapors do not pass through a centrifugal type pump.
- B) Fuel can be drawn through the impeller section of the pump when it is not in operation.
- C) The centrifugal type pump is classified as a positive displacement pump.

666. N01P AMP

Boost pumps in a fuel system

- A) operate during takeoff only.
- B) are primarily used for fuel transfer.
- C) provide a positive flow of fuel to the engine pump.

667. N01P 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.

668. N01P AMP

What is the purpose of an engine-driven fuel pump bypass valve?

- A) To divert the excess fuel back to the main tank.
- B) To prevent a damaged or inoperative pump from blocking the fuel flow of another pump in series with it.
- C) To divert the excess fuel from the pressure side of the pump to the inlet side of the pump.

669. N01P 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.

670. N01P AMP

Which type of pump is commonly used as a fuel pump on reciprocating engines?

- A) Gear.
- B) Impeller.
- C) Vane.

671. N01P 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.

672. N02P AMP

It is desirable that fuel lines have a gentle slope upward or downward and not have sharp curves or sharp rises and/or falls in order to

- A) prevent vapor lock.
- B) prevent stagnation or 'pooling' of fuel in the fuel lines.
- C) minimize the generation of static electricity by decreasing fluid friction in the lines.

673. N02P 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.

674. N02P AMP

Where should the main fuel strainer be located in the aircraft fuel system?

- A) Downstream from the wobble pump check valve.
- B) At the lowest point in the fuel system.
- C) At any point in the system lower than the carburetor strainer.

675. N02P 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.

676. N02P AMP

The Federal Aviation Regulations require the fuel flow rate for gravity systems (main and reserve) to be

- A) 125 percent of the takeoff fuel consumption of the engine.
- B) 125 percent of the maximum, except takeoff, fuel consumption of the engine.
- C) 150 percent of the takeoff fuel consumption of the engine.

677. N02P AMP

What is a characteristic of a centrifugal type fuel boost pump?

- A) It separates air and vapor from the fuel.
- B) It has positive displacement.
- C) It requires a relief valve.

678. N01P AMP

The purpose of the diaphragm in most vane type fuel pumps is to

- A) maintain fuel pressure below atmospheric pressure.
- B) equalize fuel pressure at all speeds.
- C) compensate fuel pressures to altitude changes.

679. N01P AMP

During what period does the fuel pump bypass valve open and remain open?

- A) When the fuel pump pressure is greater than the demand of the engine.
- B) When the boost pump pressure is greater than fuel pump pressure.
- C) When the fuel pump output is greater than the demand of the carburetor.

680. O02P AMP

Which of the following statements regarding volumetric efficiency of an engine is true?

- A) The volumetric efficiency of an engine will remain the same regardless of the amount of throttle opening.
- B) It is impossible to exceed 100 percent volumetric efficiency of any engine regardless of the type of supercharger used.
- C) It is possible to exceed 100 percent volumetric efficiency of some engines by the use of superchargers of the proper type.

681. O02P AMP

The purpose of a bellmouth compressor inlet is to

- A) provide an increased ram air effect at low airspeeds.
- B) maximize the aerodynamic efficiency of the inlet.
- C) provide an increased pressure drop in the inlet.

682. O02P AMP

What is used to drive a supercharger?

- A) Exhaust gases.
- B) Gear train from the crankshaft.
- C) Belt drive through a pulley arrangement.

683. O02P AMP

The purpose of a sonic venturi on a turbocharged engine is to

- A) limit the amount of air that can flow from the turbocharger into the cabin for pressurization.
- B) increase the amount of air that can flow from the turbocharger into the cabin for pressurization.
- C) increase the velocity of the fuel/air charge.

684. O02P AMP

The differential pressure controller in a turbocharger system

- A) reduces bootstrapping during part throttle operation.
- B) positions the waste gate valve for maximum power.
- C) provides a constant fuel-to-air ratio.

685. O02P AMP

What is the purpose of a turbocharger system for a small reciprocating aircraft engine?

- A) Compresses the air to hold the cabin pressure constant after the aircraft has reached its critical altitude.
- B) Maintains constant air velocity in the intake manifold.
- C) Compresses air to maintain manifold pressure constant from sea level to the critical altitude of the engine.

686. O03P AMP

When starting an engine equipped with a carburetor air heater, in what position should the heater be placed?

- A) Hot.
- B) Cold.
- C) Neutral.

687. O02P AMP

What is the purpose of the rate of change controller in a turbocharger system?

- A) Limits the maximum manifold pressure that can be produced by the turbocharger at full throttle conditions.
- B) Controls the rate at which the turbocharger discharge pressure will increase.
- C) Controls the position of the waste gate after the aircraft has reached its critical altitude.

688. O02P 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.

689. O02P 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.

690. O02P AMP

Bootstrapping of a turbocharged engine is indicated by

- A) a overboost condition of the engine on takeoff.
- B) a transient increase in engine power.
- C) a maximum increase in manifold pressure.

691. O02P 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.

692. O02P AMP

As manifold pressure increases in a reciprocating engine, the

- A) volume of air in the cylinder increases.
- B) weight of the fuel/air charge decreases.
- C) density of air in the cylinder increases.

693. O02P AMP

During full power output of an unsupercharged engine equipped with a float type carburetor, in which of the following areas will the highest pressure exist?

- A) Venturi.
- B) Intake manifold.
- C) Carburetor air scoop.

694. O01P 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.

695. O01P AMP

Carburetor icing on an engine equipped with a constant speed propeller can be detected by

- A) a decrease in power output with no change in manifold pressure or RPM.
- B) an increase in manifold pressure with a constant RPM.

C) a decrease in manifold pressure with a constant RPM.

696. O01P AMP

Carburetor icing is most severe at

- A) air temperatures between 30 and 40 °F.
- B) high altitudes.
- C) low engine temperatures.

697. O01P 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.

698. O02P 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.

699. O03P 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.

700. O02P 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.

701. O03P AMP

In an airplane equipped with an alternate air system, if the main air duct air filter becomes blocked or clogged, the

- A) system will automatically allow warm, unfiltered air to be drawn into the engine.
- B) flow of air into the engine will be slowed or cut off unless alternate air is selected.

C) system will automatically allow warm, filtered alternate air to be drawn into the engine.

702. O03P 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.

703. O03P AMP

If carburetor or induction system icing is not present when carburetor heat is applied with no change in the throttle setting, the

- A) mixture will become richer.
- B) manifold pressure will increase.
- C) engine RPM will increase.

704. O02P AMP

When an engine with a subsonic divergent type inlet duct is running in place at high speed on the ground, the air pressure within the inlet is

- A) positive.
- B) negative.
- C) ambient.

705. O03P AMP

The action of a carburetor airscoop is to supply air to the carburetor, but it may also

- A) cool the engine.
- B) keep fuel lines cool and prevent vapor lock.
- C) increase the pressure of the incoming air by ram effect.

706. O02P 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.

707. P01P AMP

The position of the cowl flaps during normal cruise flight conditions is

- A) closed.
- B) open.

C) one half open.

708. P01P AMP

How do cowl flaps aid in cooling a horizontally opposed aircraft engine?

- A) Recirculates air through the engine cylinders.
- B) Directs air through the engine cylinders.
- C) Controls the amount of air flowing around the cylinders.

709. P01P AMP

Where are cooling fins usually located on air cooled engines?

- A) Exhaust side of the cylinder head, inside the pistons, and connecting rods.
- B) Cylinder head, cylinder walls, and inside the piston.
- C) Cylinder head, cylinder barrel, and inside the piston.

710. P01P 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.

711. P01P AMP

Cracks in cooling fins that do not extend into the cylinder head may be repaired by

- A) filling the extremities of crack with liquid metal.
- B) removing affected area and contour filing within limits.
- C) welding and then grinding or filing to original thickness.

712. P02P AMP

Increased engine heat will cause volumetric efficiency to

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

713. P01P AMP

A bent cooling fin on an aluminum cylinder head

- A) should be sawed off and filed smooth.
- B) should be left alone if no crack has formed.
- C) should be stop drilled or a small radius filed at the point of the bend.

714. P02P AMP

An engine becomes overheated due to excessive taxiing or improper ground runup. Prior to shutdown, operation must continue until cylinders have cooled, by running engine at

- A) low RPM with oil dilution system activated.
- B) idle RPM.
- C) high RPM with mixture control in rich position.

715. P02P 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.

716. P02P AMP

Which of the following results in a decrease in volumetric efficiency?

- A) Cylinder head temperature too low.
- B) Part throttle operation.
- C) Short intake pipes of large diameter.

717. P02P AMP

Which statement is true regarding the air passing through the combustion section of a jet engine?

- A) Most is used for engine cooling.
- B) Most is used to support combustion.
- C) A small percentage is frequently bled off at this point to be used for air-conditioning and/or other pneumatic powered systems.

718. P02P 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.

719. P02P AMP

The most common method and generally the best conduction of heat from the inside of a cylinder barrel to the cooling air is accomplished by

- A) machining fins directly on the outside of the barrel.
- B) shrinking on a jacket or muff of aluminum cooling fins around a steel cylinder sleeve.

C) machining fins directly on the outside of the barrel and shrinking on a jacket or muff of aluminum cooling fins around a steel cylinder sleeve (on different areas of the barrel).

720. P02P AMP

Prolonged idling of an engine will usually result in

- A) excessive cylinder head temperatures.
- B) increased oil consumption.
- C) foreign material buildup on spark plugs.

721. P02P AMP

The purpose of an intercooler when used with a turbocharger is to cool the

- A) exhaust gases before they come in contact with the turbo drive.
- B) turbocharger bearings.
- C) air entering the carburetor from the turbocharger.

722. P02P 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.

723. P02P AMP

Cylinder head temperatures are measured by means of an indicator and a

- A) resistance bulb sensing device.
- B) wheatstone bridge sensing device.
- C) thermocouple sensing device.

724. P01P 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.

725. P02P 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.

726. P02P AMP

The greatest portion of heat generated by combustion in a typical aircraft reciprocating engine is

- A) converted into useful power.
- B) carried out with the exhaust gases.
- C) dissipated through the cylinder walls and heads.

727. P02P 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.

728. P02P AMP

What part of an air cooled cylinder assembly has the greatest fin area per square inch?

- A) Cylinder barrel.
- B) Rear of the cylinder head.
- C) Exhaust valve port.

729. P02P 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.

730. P01P AMP

What is the purpose of an augments used in some reciprocating engine exhaust systems?

- A) To reduce exhaust back pressure.
- B) To aid in cooling the engine.
- C) To assist in displacing the exhaust gases.

731. P02P AMP

Which of the following assists in removing heat from the metal walls and fins of an air-cooled cylinder assembly?

- A) An intercooler system.
- B) A baffle and cowl arrangement.
- C) An engine induction system.

732. P02P AMP

High cylinder head temperatures are likely to result from

- A) a very lean mixture at high power settings.
- B) fouled spark plugs.
- C) a very rich mixture at high power settings.

733. P01P 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.

734. Q03P AMP

Operating thrust reversers at low ground speeds can sometimes cause

- 1. sand or other foreign object ingestion.
- 2. hot gas re-ingestion.
- 3. compressor stalls.

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

735. Q02P AMP

All of the following are recommended markers for reciprocating engine exhaust systems except

- A) India ink.
- B) lead pencil.
- C) Prussian blue.

736. Q01P 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.

737. Q02P AMP

What is the purpose of an exhaust outlet guard on a small reciprocating engine?

- A) To prevent dislodged muffler baffles from obstructing the muffler outlet.
- B) To reduce spark exit.

C) To shield adjacent components from excessive heat.

738. Q02P 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.

739. Q02P AMP

How may reciprocating engine exhaust system leaks be detected?

- A) An exhaust trail aft of the tailpipe on the airplane exterior.
- B) Fluctuating manifold pressure indication.
- C) Signs of exhaust soot inside cowling and on adjacent components.

740. Q02P 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.

741. Q02P AMP

Ball joints in reciprocating engine exhaust systems should be

- A) tight enough to prevent any movement.
- B) disassembled and the seals replaced every engine change.
- C) loose enough to permit some movement.

742. Q03P 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.

743. Q02P AMP

How are combustion liner walls cooled in a gas turbine engine?

- A) By secondary air flowing through the combustion chamber.
- B) By the pattern of holes and louvers cut in the diffuser section.
- C) By bleed air vented from the engine air inlet.

744. Q03P AMP

The purpose of cascade vanes in a thrust reversing system is to

- A) form a solid blocking door in the jet exhaust path.
- B) turn the exhaust gases forward just after exiting the exhaust nozzle.
- C) turn to a forward direction the fan and/or hot exhaust gases that have been blocked from exiting through the exhaust nozzle.

745. Q03P AMP

The rearward thrust capability of an engine with the thrust reverser system deployed is

- A) less than its forward capability.
- B) equal to or less than its forward capability, depending on ambient conditions and system design.
- C) equal to its forward capability.

746. Q03P 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.

747. Q03P AMP

What is the proper operating sequence when using thrust reversers to slow an aircraft after landing?

- A) Advance thrust levers up to takeoff position as conditions require, select thrust reverse, de-select thrust reverser, retard thrust levers to ground idle.
- B) Retard thrust levers to ground idle, raise thrust reverser levers as required, and retard thrust reverser levers to ground idle.
- C) Select thrust reverse, advance thrust reverser levers no higher than 75% N1, and retard thrust reverser levers to idle at approximately normal taxi speed.

748. Q02P AMP

Most exhaust system failures result from thermal fatigue cracking in the areas of stress concentration. This condition is usually caused by

- A) the drastic temperature change which is encountered at altitude.
- B) improper welding techniques during manufacture.
- C) the high temperatures at which the exhaust system operates.

749. Q01P AMP

Repair of exhaust system components

- A) is impossible because the material cannot be identified.
- B) must be accomplished by the component manufacturer.
- C) is not recommended to be accomplished in the field.

750. Q01P AMP

Reciprocating engine exhaust system designs commonly used to provide for ease of installation and/or allow for expansion and contraction, may include the use of

1. spring loaded ball/flexible joints.
2. slip joints.
3. bellows.
4. flexible metal tubing.

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

751. Q01P AMP

One source commonly used for carburetor air heat is

- A) turbocharger heated air.
- B) alternate air heat.
- C) exhaust gases.

752. Q01P 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.

753. Q01P AMP

What is the purpose of a slip joint in an exhaust collector ring?

- A) It aids in alignment and absorbs expansion.
- B) It reduces vibration and increases cooling.
- C) It permits the collector ring to be installed in one piece.

754. Q02P 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.

755. Q01P 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.

756. Q02P AMP

Reciprocating engine exhaust systems that have repairs or sloppy weld beads which protrude internally are unacceptable because they cause

- A) base metal fatigue.
- B) localized cracks.
- C) local hot spots.

757. Q01P AMP

On turbojet powered airplanes, thrust reversers are capable of producing between?

- A) 35 and 50 percent of the rated thrust in the reverse direction.
- B) 35 and 75 percent of the rated thrust in the reverse direction.
- C) 35 and 65 percent of the rated thrust in the reverse direction.

758. Q02P 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.

759. Q01P AMP

Sodium filled valves are advantageous to an aviation engine because they

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

760. Q02P AMP

How should ceramic coated exhaust components be cleaned?

- A) With alkali.
- B) By degreasing.

C) By mechanical means.

761. Q02P AMP

Power recovery turbines used on some reciprocating engines are driven by the

- A) exhaust gas pressure.
- B) crankshaft.
- C) velocity of the exhaust gases.

762. Q02P AMP

How should corrosion resistant steel parts such as exhaust collectors be blast cleaned?

- A) Use steel grit which has not previously been used on soft iron.
- B) Use super fine granite grit.
- C) Use sand which has not previously been used on iron or steel.

763. Q02P AMP

How do the turbines which are driven by the exhaust gases of a turbo compound engine contribute to total engine power output?

- A) By driving the crankshaft through suitable couplings.
- B) By driving the supercharger, thus relieving the engine of the supercharging load.
- C) By converting the latent heat energy of the exhaust gases into thrust by collecting and accelerating them.

764. Q02P 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.

765. Q02P AMP

Which of the following indicates that a combustion chamber of a jet engine is not operating properly?

- A) Clam shells stick in thrust reverse position.
- B) Hot spots on the tail cone.
- C) Warping of the exhaust duct liner.

766. R05P AMP

Longitudinal (fore and aft) clearance of constant speed propeller blades or cuffs must be at least 1/2 inch (12.7 mm) between propeller parts and stationary parts of the aircraft. This clearance is with the propeller blades

- A) at takeoff pitch (maximum thrust) angle.

B) feathered or in the most critical pitch configuration.

C) at the lowest pitch angle.

767. R05P AMP

Why is a constant speed counterweight propeller normally placed in full HIGH PITCH position before the engine is stopped?

A) To prevent exposure and corrosion of the pitch changing mechanism.

B) To prevent hydraulic lock of the piston when the oil cools.

C) To prevent overheating of the engine during the next start.

768. R05P 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.

769. R05P AMP

Propeller blade stations are measured from the

A) index mark on the blade shank.

B) hub centerline.

C) blade base.

770. R05P AMP

What is the result of moving the throttle on a reciprocating engine when the propeller is in the constant speed range with the engine developing cruise power?

A) Opening the throttle will cause an increase in blade angle.

B) The RPM will vary directly with any movement of the throttle.

C) Movement of the throttle will not affect the blade angle.

771. R05P AMP

The angle of attack of a rotating propeller blade is measured between the blade chord or face and which of the following?

A) Plane of blade rotation.

B) Full low pitch blade angle.

C) Relative airstream.

772. R05P 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.

773. R05P AMP

The centrifugal twisting moment of an operating propeller tends to

A) increase the pitch angle.

B) reduce the pitch angle.

C) bend the blades in the direction of rotation.

774. R05P AMP

The propeller blade angle is defined as the acute angle between the airfoil section chord line (at the blade reference station) and which of the following?

A) The plane of rotation.

B) The relative wind.

C) The axis of blade rotation during pitch change.

775. R05P AMP

Which of the following functions requires the use of a propeller blade station?

A) Measuring blade angle.

B) Indexing blades.

C) Propeller balancing.

776. R05P AMP

How can a steel propeller hub be tested for cracks?

A) By anodizing.

B) By magnetic particle inspection.

C) By etching.

777. R05P AMP

Propellers exposed to salt spray should be flushed with

A) stoddard solvent.

B) fresh water.

C) soapy water.

778. R05P AMP

Which of the following best describes the blade movement of a propeller that is in the high RPM position when reversing action is begun?

A) Low pitch directly to reverse pitch.

- B) Low pitch through high pitch to reverse pitch.
- C) Low pitch through feather position to reverse pitch.

779. R05P AMP

For takeoff, a constant speed propeller is normally set in the

- A) HIGH PITCH, high RPM position.
- B) HIGH PITCH, low RPM position.
- C) LOW PITCH, high RPM position.

780. R05P AMP

Counterweights on constant-speed propellers are generally used to aid in

- A) increasing blade angle.
- B) decreasing blade angle.
- C) unfeathering the propellers.

781. R05P AMP

Inspection of propeller blades by dye-penetrant inspection is accomplished to detect

- A) cracks or other defects.
- B) corrosion at the blade tip.
- C) torsional stress.

782. R05P AMP

During operational check of an aircraft using hydromatic full feathering propellers, the following observations are made:

The feather button, after being pushed, remains depressed until the feather cycle is complete, then opens.

When unfeathering, it is necessary to manually hold the button down until unfeathering is accomplished.

- A) Both feather cycle and unfeather cycle are functioning properly.
- B) Both feather and unfeather cycles indicate malfunctions.
- C) The feather cycle is correct. The unfeather cycle indicates a malfunction.

783. R05P AMP

The blade angle of a fixed pitch propeller

- A) is greatest at the tip.
- B) is smallest at the tip.
- C) increases in proportion to the distance each section is from the hub.

784. R05P AMP

Which of the following best describes the blade movement of a feathering propeller that is in the HIGH RPM position when the feathering action is begun?

- A) High pitch through low pitch to feather position.
- B) Low pitch through reverse pitch to feather position.
- C) Low pitch through high pitch to feather position.

785. R05P AMP

The low pitch stop on a constant speed propeller is usually set so that

- A) the engine will turn at its rated takeoff RPM at sea level when the throttle is opened to allowable takeoff manifold pressure.
- B) maximum allowable engine RPM cannot be exceeded with any combination of manifold pressure, altitude, or forward speed.
- C) the limiting engine manifold pressure cannot be exceeded with any combination of throttle opening, altitude, or forward speed.

786. R05P AMP

Which of the following forces or combination of forces operates to move the blades of a constant speed counterweight type propeller to the HIGH PITCH position?

- A) Engine oil pressure acting on the propeller piston cylinder arrangement and centrifugal force acting on the counterweights.
- B) Centrifugal force acting on the counterweights.
- C) Prop governor oil pressure acting on the propeller piston cylinder arrangement.

787. R04P AMP

What operational force tends to increase propeller blade angle?

- A) Centrifugal twisting force.
- B) Aerodynamic twisting force.
- C) Thrust bending force.

788. R05P AMP

What is the primary purpose of the metal tipping which covers the blade tips and extends along the leading edge of each wood propeller blade?

- A) To increase the lateral strength of the blade.
- B) To prevent impact damage to the tip and leading edge of the blade.
- C) To increase the longitudinal strength of the blade.

789. R05P AMP

Which of the following best describes the blade movement of a full feathering, constant speed propeller that is in the LOW RPM position when the feathering action is begun?

- A) High pitch through low pitch to feather position.
- B) High pitch directly to feather position.
- C) Low pitch through high pitch to feather position.

790. R05P 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.

791. R05P AMP

The purpose of permanently sealing and partially filling some models of McCauley propeller hubs with dyed oil is to

- A) provide an always clean separate lubrication of the internal parts.
- B) dampen pressure surges and prevent too rapid changes in propeller blade angle.
- C) make the location of cracks readily apparent.

792. R01P AMP

What unit in the propeller anti icing system controls the output of the pump?

- A) Pressure relief valve.
- B) Rheostat.
- C) Cycling timer.

793. R03P AMP

What is the purpose of an arbor used in balancing a propeller?

- A) To support the propeller on the balance knives.
- B) To level the balance stand.
- C) To mark the propeller blades where weights are to be attached.

794. R03P 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.

795. R02P 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.

796. R02P AMP

Which of the following determines oil and grease specifications for lubrication of propellers?

- A) Airframe manufacturers.
- B) Engine manufacturers.
- C) Propeller manufacturers.

797. R03P AMP

The application of more protective coating on one blade than the other when refinishing a wood propeller

- A) has little or no effect on operating characteristics.
- B) should never be done.
- C) may be necessary to achieve final balancing.

798. R01P 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.

799. R03P 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.

800. R01P AMP

Ice formation on propellers, when an aircraft is in flight, will

- A) decrease thrust and cause excessive vibration.
- B) increase aircraft stall speed and increase noise.
- C) decrease available engine power.

801. R01P 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.

802. R01P AMP

Propeller fluid anti icing systems generally use which of the following?

- A) Ethylene glycol.
- B) Isopropyl alcohol.
- C) Ethyl alcohol.

803. R01P 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.

804. R01P AMP

How is anti icing fluid ejected from the slinger ring on a propeller?

- A) By pump pressure.
- B) By centripetal force.
- C) By centrifugal force.

805. R01P 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.

806. R01P AMP

A propeller synchrophasing system allows a pilot to reduce noise and vibration by

- A) adjusting the phase angle between the propellers on an aircraft's engines.
- B) adjusting the plane of rotation of all propellers.
- C) setting the pitch angle of all propellers exactly the same.

807. R04P 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.

808. R04P AMP

What operational force causes the greatest stress on a propeller?

- A) Aerodynamic twisting force.
- B) Centrifugal force.
- C) Thrust bending force.

809. R04P 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.

810. R04P AMP

What action takes place when the cockpit control lever for a hydromatic, constant speed propeller is actuated?

- A) Compression of the speeder spring is changed.
- B) The governor booster pump pressure is varied.
- C) The governor bypass valve is positioned to direct oil pressure to the propeller dome.

811. R03P AMP

If a blade of a particular metal propeller is shortened because of damage to the tip, the remaining blade(s) must be

- A) reset (blade angle) to compensate for the shortened blade.
- B) returned to the manufacturer for alteration.
- C) reduced to conform with the shortened blade.

812. R04P AMP

During the on-speed condition of a propeller, the

- A) centrifugal force acting on the governor flyweights is greater than the tension of the speeder spring.
- B) tension on the speeder spring is less than the centrifugal force acting on the governor flyweights.
- C) centrifugal force of the governor flyweights is equal to the speeder spring force.

813. R04P AMP

When engine power is increased, the constant speed propeller tries to function so that it will

- A) maintain the RPM, decrease the blade angle, and maintain a low angle of attack.
- B) increase the RPM, decrease the blade angle, and maintain a low angle of attack.
- C) maintain the RPM, increase the blade angle, and maintain a low angle of attack.

814. R04P AMP

During engine operation at speeds lower than those for which the constant speed propeller control can govern in the INCREASE RPM position, the propeller will

- A) remain in the full HIGH PITCH position.
- B) maintain engine RPM in the normal manner until the HIGH PITCH stop is reached.
- C) remain in the full LOW PITCH position.

815. R04P AMP

A powerplant using a hydraulically controlled constant speed propeller is operating within the propeller's constant speed range at a fixed throttle setting. If the tension of the propeller governor control spring (speeder spring) is reduced by movement of the cockpit propeller control, the propeller blade angle will

- A) increase, engine manifold pressure will increase, and engine RPM will decrease.
- B) decrease, engine manifold pressure will increase, and engine RPM will decrease.
- C) decrease, engine manifold pressure will decrease, and engine RPM will increase.

816. R03P AMP

Propeller aerodynamic (thrust) imbalance can be largely eliminated by

- A) correct blade contouring and angle setting.
- B) static balancing.
- C) keeping the propeller blades within the same plane of rotation.

817. R03P AMP

Which of the following is used to correct horizontal unbalance of a wood propeller?

- A) Brass screws.
- B) Shellac.
- C) Solder.

818. R04P AMP

What actuates the pilot valve in the governor of a constant speed propeller?

- A) Engine oil pressure.
- B) Governor flyweights.
- C) Governor pump oil pressure.

819. R06P 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.

820. R05P AMP

What controls the constant speed range of a constant speed propeller?

- A) Engine RPM.
- B) Angle of climb and descent with accompanying changes in airspeed.
- C) The mechanical limits in the propeller pitch range.

821. R06P 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.

822. R06P AMP

If propeller cones or hub cone seats show evidence of galling and wear, the most likely cause is

- A) the pitch change stops were located incorrectly, causing the cone seats to act as the high pitch stop.
- B) the propeller retaining nut was not tight enough during previous operation.
- C) the front cone was not fully bottomed against the crankshaft splines during installation.

823. R06P AMP

On aircraft equipped with hydraulically operated constant speed propellers, all ignition and magneto checking is done with the propeller in which position?

- A) High RPM.
- B) Low RPM.
- C) High pitch range.

824. R06P AMP

Oil leakage around the rear cone of a hydromatic propeller usually indicates a defective

- A) piston gasket.
- B) spider shaft oil seal.

C) dome barrel oil seal.

825. R06P 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.

826. R06P 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.

827. R06P AMP

What is the basic purpose of the three small holes (No. 60 drill) in the tipping of wood propeller blades?

- A) To provide a means for inserting balancing shot when necessary.
- B) To provide a means for periodically impregnating the blade with preservation materials.
- C) To allow the moisture which may collect between the tipping and the wood to escape (vent the tipping).

828. R06P 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.

829. R06P AMP

The primary purpose of the front and rear cones for propellers that are installed on splined shafts is to

- A) position the propeller hub on the splined shaft.
- B) prevent metal to metal contact between the propeller and the splined shaft.
- C) reduce stresses between the splines of the propeller and the splines of the shaft.

830. R07P AMP

After proper removal of aluminum blade damage, the affected surface should be polished with

- A) fine steel wool.
- B) very fine sandpaper.
- C) powdered soapstone.

831. R07P 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.

832. R07P AMP

The primary reason for careful inspection and prompt repairing of minor surface defects such as scratches, nicks, gouges, etc. on aluminum alloy propellers is to prevent

- A) corrosion.
- B) unbalanced aerodynamics.
- C) fatigue failure.

833. R07P 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.

834. R07P AMP

Surface treatment to counter the effects of dye-penetrant inspection on a propeller is accomplished by

- A) washing off with solvent.
- B) wiping with alcohol.
- C) rinse the blade in alodine solution.

835. R06P AMP

Manually feathering a hydromechanical propeller means to

- A) block governor oil pressure to the cylinder of the propeller.
- B) port governor oil pressure to the cylinder of the propeller.
- C) port governor oil pressure from the cylinder of the propeller.

836. R07P AMP

When preparing a propeller blade for inspection it should be cleaned with

- A) mild soap and water.
- B) steel wool.
- C) methyl ethyl ketone.

837. R06P AMP

In what position is the constant speed propeller control placed to check the magnetos?

- A) Full decrease, low propeller blade pitch angle.
- B) Full increase, high propeller blade pitch angle.
- C) Full increase, low propeller blade pitch angle.

838. R07P 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.

839. R07P AMP

Generally, unless otherwise specified by the manufacturer, repairs of nicks, scratches, gouges, etc. on aluminum propeller blades must be made

- A) parallel to the length of the blade.
- B) perpendicular to the blade axis.
- C) so as to return the damaged area to the original dimensions.

840. R07P 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.

841. R07P AMP

Which of the following methods is used to straighten a bent aluminum propeller blade that is within repairable limits?

- A) Careful heating to accomplish straightening, followed by heat treatment to restore original strength.
- B) Cold straightening only.
- C) Either hot or cold straightening, depending on the location and severity of damage.

842. R07P 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.

843. R06P AMP

How is the oil pressure delivery on a hydromatic propeller normally stopped after the blades have reached their full feathered position?

- A) Pulling out the feathering push button.
- B) Electric cutout pressure switch.
- C) Stop lugs in the teeth of the rotating cam.

844. R07P AMP

What method would be used to inspect an aluminum propeller blade when a crack is suspected

- A) use a bright light.
- B) magnetic particle.
- C) dye-penetrant.

845. R05P AMP

What operational force causes propeller blade tips to lag in the opposite direction of rotation?

- A) Thrust bending force.
- B) Aerodynamic twisting force.
- C) Torque bending force.

846. R05P AMP

Which of the following statements about constant speed counterweight propellers is also true when referring to two position counterweight propellers?

- A) Blade angle changes are accomplished by the use of two forces, one hydraulic and the other centrifugal.
- B) Since an infinite number of blade angle positions are possible during flight, propeller efficiency is greatly improved.
- C) The pilot selects the RPM and the propeller changes pitch to maintain the selected RPM.

847. R05P AMP

Most engine propeller combinations have one or more critical ranges within which continuous operation is not permitted. Critical ranges are established to avoid

- A) severe propeller vibration.

B) low or negative thrust conditions.

C) inefficient propeller pitch angles.

848. R05P 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.

849. R05P AMP

An aircraft's propeller system beta range

A) is used to produce zero or negative thrust.

B) is used to achieve maximum thrust during takeoff.

C) refers to the most fuel efficient pitch range to use at a given engine RPM.

850. R05P 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.

851. R05P AMP

The purpose of a three way propeller valve is to

A) direct oil from the engine oil system to the propeller cylinder.

B) direct oil from the engine through the governor to the propeller.

C) permit constant speed operation of the propeller.

852. R05P AMP

The primary purpose of a propeller is to

A) create lift on the fixed airfoils of an aircraft.

B) change engine horsepower to thrust.

C) provide static and dynamic stability of an aircraft in flight.

853. R05P 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.

854. R05P AMP

The centrifugal twisting force acting on a propeller blade is

- A) greater than the aerodynamic twisting force and tends to move the blade to a higher angle.
- B) less than the aerodynamic twisting force and tends to move the blade to a lower angle.
- C) greater than the aerodynamic twisting force and tends to move the blade to a lower angle.

855. R05P 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.

856. R05P AMP

Constant-speed non-feathering McCauley, Hartzell, and other propellers of similar design without counterweights increase pitch angle using

- A) oil pressure.
- B) spring pressure.
- C) centrifugal twisting moment.

857. R06P AMP

What is indicated when the front cone bottoms while installing a propeller?

- A) Propeller dome combination is incorrect.
- B) Blade angles are incorrect.
- C) Rear cone should be moved forward.

858. R06P AMP

Which of the following occurs to cause front cone bottoming during propeller installation?

- A) The front cone becomes bottomed in the front propeller hub cone seat before the rear propeller hub cone seat has engaged the rear cone.
- B) The front cone enters the front propeller hub cone seat at an angle causing the propeller retaining nut to appear tight when it is only partially tightened.
- C) The front cone contacts the ends of the shaft splines, preventing the front and rear cones from being tightened against the cone seats in the propeller hub.

859. R06P AMP

When running up an engine and testing a newly installed hydromatic propeller, it is necessary to exercise the propeller by moving the governor control through its entire travel several times to

- A) seat the blades fully against the low pitch stop.

- B) free the dome of any entrapped air.
- C) test the maximum RPM setting of the governor.

860. R06P AMP

What normally prevents a Hartzell Compact propeller from going to feather when the engine is shut down on the ground?

- A) Propeller cylinder air pressure.
- B) A latch mechanism composed of springs and lock pins.
- C) Accumulator provided oil pressure.

861. R05P AMP

Geometric pitch of a propeller is defined as the

- A) effective pitch minus slippage.
- B) effective pitch plus slippage.
- C) angle between the blade chord and the plane of rotation.

862. R05P AMP

When lubricating a Hartzell propeller blade with grease, to prevent damage to the blade seals, the service manual may recommend on some models to

- A) pump grease into both zerk fittings for the blade simultaneously.
- B) remove the seals prior to greasing and reinstall them afterwards.
- C) remove one of the two zerk fittings for the blade and grease the blade through the remaining fitting.

863. R05P 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.

864. R07P 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.

865. R05P AMP

(1) During takeoff, propeller thrust (pull) is greatest if the blade angle of attack is low and the engine power setting is high.

(2) With the aircraft stationary, propeller thrust is greatest if the blade angle of attack is high and the engine power setting is high.

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.

866. R05P 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.

867. R05P AMP

What are the rotational speed and blade pitch angle requirements of a constant speed propeller during takeoff?

A) Low speed and high pitch angle.

B) High speed and low pitch angle.

C) High speed and high pitch angle.

868. R05P 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.

869. T01P AMP

When necessary, APU engine cooling before shutdown may be accomplished by

A) unloading the generator(s).

B) closing the bleed air valve.

C) opening the bleed air valve.

870. T01P AMP

Frequently, an aircraft's auxiliary power unit (APU) generator

- A) is identical to the engine-driven generators.
- B) supplements the aircraft's engine-driven generators during peak loads.
- C) has a higher load capacity than the engine-driven generators.

871. T01P 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.

872. T01P 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.

873. T01P AMP

An APU is usually rotated during start by

- A) a turbine impingement system.
- B) a pneumatic starter.
- C) an electric starter.

874. T01P 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.

875. T01P AMP

The function of an APU air inlet plenum is to

- A) increase the velocity of the air before entering the compressor.
- B) decrease the pressure of the air before entering the compressor.
- C) stabilize the pressure of the air before it enters the compressor.

876. T01P 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.

877. T01P AMP

Generally, when maximum APU shaft output power is being used in conjunction with pneumatic power

- A) pneumatic loading will be automatically modulated to maintain a safe EGT.
- B) electrical loading will be automatically modulated to maintain a safe EGT.
- C) temperature limits and loads must be carefully monitored by the operator to maintain a safe EGT.