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Bank: (RTP - Powerplant Questions)
Airman Knowledge Test Question Bank

Generated for St. George applicants retesting for the Aviation Mechanic Powerplant Exam (Powerplant Questions).

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

1. A03P AMP

Which of the following is most likely to occur if a reciprocating aircraft engine is operated with inadequate valve clearance?

- A) The valves will remain closed for longer periods than specified by the engine manufacturer.
- B) The valves will not seat positively during start and engine warm-up.
- C) The further decrease in valve-to-rocker arm clearance that occurs as engine temperatures increase will cause damage to the valve-operating mechanism.

2. A03P AMP

If an engine operates with a low oil pressure and a high oil temperature, the problem may be caused by

- A) insufficient oil supply.
- B) a failure of rings to seat.
- C) a oil cooler bypass closed.

3. A03P AMP

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

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

4. A03P AMP

A hissing sound from the exhaust stacks when the propeller is being pulled through manually indicates

- A) a cracked exhaust stack.
- B) exhaust valve blow by.
- C) worn piston rings.

5. A03P AMP

17. 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.

18. 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.

19. 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.

20. A03P AMP

What is the best indication of worn valve guides?

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

21. 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.

22. 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.

23. 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.

24. 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.

25. A03P AMP

Which of the following will be caused by excessive valve clearance of a cylinder on a reciprocating aircraft engine?

- A) Reduced valve overlap period.
- B) Intake and exhaust valves will open early and close late.
- C) A power increase by shortening the exhaust event.

26. A03P AMP

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

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

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. A03P AMP

The thermostatic valve, used on some reciprocating aircraft engine installations, helps regulate oil temperature by

A) controlling oil flow through the oil cooler.

B) recirculating hot oil back through the oil cooler.

C) controlling air flow through the oil cooler.

34. 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.

35. A03P AMP

Which of the following would indicate a general weak engine condition when operated with a fixed pitch propeller or test club?

- A) Lower than normal static RPM, full throttle operation.
- B) Manifold pressure lower at idle RPM than at static RPM.
- C) Lower than normal manifold pressure for any given RPM.

36. A04P AMP

How may it be determined that a reciprocating engine with a dry sump is pre oiled sufficiently?

- A) The engine oil pressure gauge will indicate normal oil pressure.
- B) Oil will flow from the engine return line or indicator port.
- C) When the quantity of oil specified by the manufacturer has been pumped into the engine.

37. 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.

38. A04P AMP

Which statement pertaining to fuel/air ratios is true?

- A) The mixture ratio which gives the best power is richer than the mixture ratio which gives maximum economy.
- B) A rich mixture is faster burning than a normal mixture.
- C) The mixture ratio which gives maximum economy may also be designated as best power mixture.

39. A04P AMP

Backfiring through the carburetor generally results from the use of

- A) an excessively lean mixture.
- B) excessively atomized fuel.
- C) an excessively rich mixture.

40. A04P AMP

Which of these conditions will cause an engine to have an increased tendency to detonate?

- 1. High manifold pressure.

2. High intake air temperature.
3. Engine overheated.
4. Late ignition timing.

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

41. A04P AMP

When will small induction system air leaks have the most noticeable effect on engine operation?

- A) At high RPM.
- B) At maximum continuous and takeoff power settings.
- C) At low RPM.

42. A04P AMP

To reduce the power output of an engine equipped with a constant speed propeller and operating near maximum BMEP, the

- A) manifold pressure is reduced with the throttle control before the RPM is reduced with the propeller control.
- B) manifold pressure is reduced with the propeller control before the RPM is reduced with the throttle control.
- C) RPM is reduced with the propeller control before the manifold pressure is reduced with the throttle control.

43. 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.

44. 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.

45. 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.

46. 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.

47. 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.

48. 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.

49. 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.

50. 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.

51. A04P AMP

Excessive valve clearance in a piston engine

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

52. 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.

53. 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.

54. A04P AMP

One of the best indicators of reciprocating engine combustion chamber problems is

- A) excessive engine vibration.
- B) starting difficulties.
- C) spark plug condition.

55. A04P AMP

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

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

56. A04P AMP

What could cause excessive pressure buildup in the crankcase of a reciprocating engine?

- A) Plugged crankcase breather.
- B) Improper warmup operation.
- C) An excessive quantity of oil.

57. 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.

58. 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.

59. 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.

60. 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.

61. 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.

62. 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.

63. B02P AMP

An advantage of the axial flow compressor is its

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

64. 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.

65. 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.

66. B02P AMP

What is the function of the inlet guide vane assembly on an axial flow compressor?

- A) Directs the air into the first stage compressor at the proper angle.
- B) Converts velocity energy into pressure energy.
- C) Converts pressure energy into velocity energy.

67. 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.

68. 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.

69. 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.

70. 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.

71. B02P AMP

What is the proper starting sequence for a turbojet engine?

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

72. 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.

73. 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.

74. 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.

75. 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.

76. B02P AMP

Turbine engine flameout may be caused by improper

- A) specific density setting.
- B) fuel-air mixture.
- C) operation by the pilot.

77. 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.

78. 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.

79. 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.

80. B02P AMP

A gas turbine engine engine comprises which three main sections?

- A) Compressor, diffuser, and stator.
- B) Turbine, combustion, and stator.
- C) Compressor, combustion, turbine.

81. B02P AMP

Stator blades in the compressor section of an axial flow turbine engine

- A) increase the air velocity and prevent swirling.

- B) straighten the airflow and accelerate it.
- C) decrease the air velocity and prevent swirling.

82. 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.

83. B02P AMP

What is meant by a double entry centrifugal compressor?

- A) A compressor that has two intakes.
- B) A two stage compressor independently connected to the main shaft.
- C) A compressor with vanes on both sides of the impeller.

84. B02P AMP

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

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

85. B02P AMP

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

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

86. 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.

87. 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.

88. 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.

89. 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.

90. B02P AMP

Which two elements make up the axial flow compressor assembly?

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

91. B02P AMP

The highest heat to metal contact in an aircraft gas turbine engine is the

- A) burner cans.
- B) first stage turbine nozzle vanes.
- C) first stage turbine blades.

92. B02P AMP

An advantage of the centrifugal flow compressor is its high

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

93. B02P AMP

The nozzles in the turbine section of a gas turbine engine

- A) increase the velocity of the gas flow.
- B) decrease the velocity of the gas flow.
- C) increase the pressure of the gas flow.

94. 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.

95. 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.

96. 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.

97. 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.

98. 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.

99. 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.

100. B02P AMP

In a dual axial flow compressor, the first stage turbine drives

- A) N2 compressor.
- B) N1 compressor.

C) low pressure compressor.

101. 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.

102. 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.

103. 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.

104. B02P AMP

The two types of centrifugal compressor impellers are

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

105. 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.

106. B02P AMP

In an axial flow compressor, one purpose of the stator vanes at the discharge end of the compressor is to

- A) straighten the airflow and eliminate turbulence.
- B) increase the velocity and prevent swirling and eddying.
- C) decrease the velocity, prevent swirling, and decrease pressure.

107. 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.

108. 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.

109. B02P AMP

Using standard atmospheric conditions, the standard sea level temperature is

- A) 59 °F.
- B) 59 °C.
- C) 29 °C.

110. B02P AMP

Standard sea level pressure is

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

111. B02P AMP

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

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

112. B03P AMP

To prevent seizing of the igniter plug, the threads in many cases are

- A) coated with turbine oil.
- B) silver plated.

C) copper plated.

113. B03P AMP

What type igniter plug is used in the low tension ignition system of an aircraft turbofan engine?

- A) Low voltage, high amperage glow plug.
- B) Self-ionizing or shunted-gap type plug.
- C) Recessed surface gap plug.

114. 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.

115. 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.

116. B03P AMP

What is the purpose of the pressurization and dump valve used on aircraft gas turbine engines?

- A) The fuel is quickly cut off to the nozzles, and the manifolds are drained preventing fuel boiling as a result of residual engine heat.
- B) The valve controls compressor stalls by dumping compressor bleed air from the compressor discharge port under certain conditions.
- C) The valve maintains minimum fuel pressure to the engine fuel control unit inlet and dumps excessive fuel back to the inlet of the engine driven fuel pump.

117. B03P AMP

Name the working fluid used to provide pressure to the variable inlet guide vane actuators used on some turbine engine compressors.

- A) Hydraulic fluid, MIL-H-5606
- B) Engine oil, MIL-L-23699
- C) Jet engine fuel, ASTM-D-1655

118. B03P AMP

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

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

C) Compressor outlet.

119. 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.

120. 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.

121. 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.

122. B03P AMP

Compressor stall is a condition in a turbine engine axial flow compressor in which a

- A) low angle of attack of one or more blades becomes excessive, and the smooth airflow through the compressor is disrupted.
- B) high angle of attack of one or more blades becomes excessive, and the smooth airflow through the compressor is disrupted.
- C) high angle of attack of one or more blades becomes excessive, and the smooth airflow through the compressor is maintained.

123. 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.

124. B03P AMP

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

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

125. B03P AMP

Severe rubbing of turbine engine compressor blades will usually cause

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

126. 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.

127. B03P AMP

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

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

128. 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.

129. 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.

130. 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.

131. B03P AMP

The Brayton cycle is known as the constant

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

132. 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.

133. 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.

134. 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.

135. 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.

136. 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.

137. 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.

138. C01P AMP

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

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

139. 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.

140. 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.

141. 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.

142. 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.

143. 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.

144. 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.

145. 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.

146. 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.

147. 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.

148. C01P AMP

A severe condition of chafing or fretting in which a transfer of metal from one part to another occurs is called

- A) scoring.
- B) burning.
- C) galling.

149. 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).

150. 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.

151. C01P AMP

Straightening nitrided crankshafts is

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

152. C01P AMP

Where would one find information for an R1830-92 engine certificated in accordance with the Civil Air Regulations (CAR) and installed on a DC-3?

- A) The CAA Aircraft Specification Sheet.
- B) The CAA Engine Specification sheet.
- C) The FAA Aircraft Type Certificate Data Sheet.

153. 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.

154. 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.

155. 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.

156. 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.

157. 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.

158. 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.

159. 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.

160. 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.

161. 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.

162. C01P AMP

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

A) fretting.

B) brinelling.

C) galling.

163. 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.

164. 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.

165. 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.

166. 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.

167. H02P AMP

Jet engine thermocouples are usually constructed of

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

168. H02P AMP

The engine pressure ratio (EPR) indicator is a direct indication of

- A) engine thrust being produced.
- B) pressure ratio between the front and aft end of the compressor.
- C) ratio of engine RPM to compressor pressure.

169. H02P AMP

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

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

170. 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.

171. 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.

172. 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.

173. 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.

174. 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.

175. 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.

176. 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.

177. 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.

178. 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.

179. 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.

180. 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.

181. 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.

182. 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.

183. H02P AMP

What instrument indicates the thrust of a gas turbine engine?

- A) Exhaust gas temperature indicator.
- B) Turbine inlet temperature indicator.
- C) Engine pressure ratio indicator.

184. H02P AMP

Which of the following is a primary engine instrument?

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

185. H02P AMP

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

- A) Electrodynamicometer.
- B) Galvanometer.
- C) Thermocouple type meter.

186. 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.

187. 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.

188. H02P AMP

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

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

189. 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.

190. 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.

191. 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.

192. 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.

193. H02P AMP

The purpose of an exhaust gas temperature indicator is to indicate the

- A) brake specific fuel consumption.

- B) temperature of the exhaust gases in the exhaust manifold.
- C) temperature of the exhaust gases in the cylinder head.

194. 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.

195. 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.

196. 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.

197. 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.

198. 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.

199. 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.

200. 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.

201. 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.

202. 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.

203. 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.

204. 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.

205. 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.

206. 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.

207. I01P AMP

A fire involving energized electrical equipment is defined as a

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

208. I01P AMP

How are most aircraft turbine engine fire extinguishing systems activated?

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

209. 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

210. I01P AMP

A fuel or oil fire is defined as a

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

C) class C fire.

211. 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).

212. 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.

213. I01P AMP

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

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

214. 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.

215. 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.

216. 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 thermostwitch which closes when heated to a high temperature.

217. 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.

218. I01P AMP

Which of the following is NOT used to detect fires in reciprocating engine nacelles?

- A) Smoke detectors.
- B) Overheat detectors.
- C) Flame detectors.

219. 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.

220. I01P AMP

A continuous loop fire detector is what type of detector?

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

221. 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.

222. 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.

223. 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.

224. 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.

225. 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.

226. 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.

227. 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.

228. 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.

229. I01P AMP

The most satisfactory extinguishing agent for an electrical fire is

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

230. 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.

231. 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.

232. 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.

233. 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.

234. 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.

235. 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.

236. 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.

237. 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.

238. 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.

239. 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.

240. 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.

241. 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.

242. 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.

243. 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.

244. J02P AMP

What type of electrical circuit protection is used for powerplant electrical systems?.

- A) Reverse flow capacitor.
- B) Circuit breakers.
- C) Low resistance, high current precision resistors.

245. 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.

246. 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.

247. 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.

248. 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.

249. 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.

250. 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.

251. 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.

252. 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.

253. 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.

254. 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.

255. 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.

256. J02P AMP

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

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

257. 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.

258. 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.

259. 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.

260. 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.

261. 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.

262. 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.

263. 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.

264. 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.

265. 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.

266. 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.

267. J02P AMP

Electrical circuit protection devices are installed primarily to protect the

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

268. K03P AMP

Some reciprocating engines use an oil pressure relief valve to

- A) keep the pressure constant as the engine RPM changes.
- B) compensate for changes in atmospheric pressure that accompany altitude changes.
- C) automatically keep oil pressure nearly the same whether the oil is warm or cold.

269. 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.

270. 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.

271. 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.

272. 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.

273. 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.

274. 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.

275. K03P AMP

A turbine engine dry sump lubrication system of the self contained, high pressure design

- A) has no heat exchanger.
- B) consists of pressure, breather, and scavenge subsystems.
- C) stores oil in the engine crankcase.

276. K03P AMP

Lubrication system last chance filters in turbine engines are usually cleaned during

- A) hot section inspection.
- B) 150-hour phase inspections.
- C) overhaul.

277. 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.

278. 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.

279. 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.

280. 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.

281. 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.

282. 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.

283. 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.

284. 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.

285. 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.

286. 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.

287. 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.

288. 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.

289. K03P AMP

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

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

290. 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.

291. K03P AMP

Which of the following lubrication system components is never located between the pressure pump and the engine pressure system?

- A) Engine vent system.
- B) Oil temperature bulb.
- C) Oil pressure check valve.

292. 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.

293. 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.

294. 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.

295. K03P AMP

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

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

296. 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.

297. 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.

298. K03P AMP

Cylinder walls are usually lubricated by

- A) splashed or sprayed oil.
- B) a direct pressure system fed through the crankshaft, connecting rods, and the piston pins to the oil control ring groove in the piston.
- C) oil that is picked up by the oil control ring when the piston is at bottom center.

299. 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.

300. K03P AMP

Excessive oil is prevented from accumulating on the cylinder walls of a reciprocating engine by

- A) the design shape of the piston skirt.
- B) internal combustion pressure forcing oil back to the engine sump.

C) oil control rings on the pistons.

301. 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.

302. 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.

303. 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.

304. 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.

305. 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.

306. 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.

307. 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.

308. 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.

309. 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.

310. L03P AMP

(Refer to Powerplant figure 5.) Which malfunctions will allow the igniters to operate when tested but be inoperative during a start attempt?

- 1. Conductor No. 10 broken.
 - 2. Conductor No. 11 broken.
 - 3. Ignition relay inoperative.
 - 4. Conductor No. 12 broken.
- A) 1 or 4.
 - B) 2 or 3.
 - C) 1 or 3.

311. L03P AMP

Any attempt to accelerate a turbine engine that has a hung start condition could lead to an

- A) overspeed.

- B) overtemperature.
- C) overtorque.

312. 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.)

313. L03P AMP

(Refer to Powerplant figure 5.) Which malfunctions will allow the igniters to operate normally during start but be inoperative when tested?

- 1. Conductor No. 14 broken.
 - 2. Conductor No. 10 broken.
 - 3. Conductor No. 15 broken.
 - 4. Conductor No. 12 broken.
- A) 2 or 4.
 - B) 1 or 3.
 - C) 3 or 4.

314. L03P AMP

In a typical starter-generator system, what could be the result of insufficient airflow through the engine that would require the start to be aborted?

- A) Low N1 fan speed.
- B) Hung start.
- C) Starter duty cycle exceeded.

315. 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.

316. 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.

317. L03P AMP

(Refer to Powerplant figure 5.) If wire No. 10 is broken or disconnected after starter rotation is initiated, and the power lever is advanced, the starting sequence will

- A) continue normally.
- B) continue, but the igniters will not fire.
- C) discontinue, due to start switch drop-out.

318. L03P AMP

(Refer to Powerplant figure 5.) If wire No. 8 is broken or disconnected after starter rotation is initiated, and the power lever is advanced, the

- A) starting sequence will continue normally.
- B) starter will shut down, but the igniters will continue to fire.
- C) starting sequence will discontinue.

319. 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.

320. L03P AMP

(Refer to Powerplant figure 5.) With power applied to the bus bar, what wire supplies standby power to the starter relay contact?

- A) 4.
- B) 7.
- C) 8.

321. L03P AMP

(Refer to Powerplant figure 5.) With power applied to the bus bar, what switch changes will allow the ignition exciters test switch to function?

- A) Battery switch and power lever switch, and engine master switch.
- B) Ignition switch, battery switch, and engine master switch.
- C) Engine master switch, test switch, and power lever switch.

322. L03P AMP

(Refer to Powerplant figure 5.) Placing the engine master switch and battery switch to the on position and advancing the power lever, allows current flow from the bus electrical potential to or current flow through the

- A) start switch, ignition switch, power lever relay coil, ignition relay coil, ignition relay contactor, ignition exciters, external power receptacles, one starter relay contact, fuel heat, test switch, and one undercurrent relay contact.
- B) power lever switch, ignition switch, start switch, power lever coil, power lever lock release,

fuel heat, fuel solenoid valve, fuel pump switch, external power receptacles, one starter relay contact, and one undercurrent relay contact.

C) ignition switch, start switch, power lever switch, power lever relay coil, power lever lock release, ignition switch, starter relay coil, starter relay contacts, ignition exciters, fuel solenoid valve, and external power receptacles.

323. 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).

324. 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.

325. M04P AMP

An engine with a pressure carburetor installed, as the engine starts, the mixture control is moved smoothly to what position?

- A) Full rich to a lean position.
- B) Full rich to a recommend lean position.
- C) Full lean to a full rich position.

326. 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.

327. 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.

328. 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.

329. 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.

330. 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.

331. 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.

332. 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.

333. 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.

334. M04P AMP

If the idling jet becomes clogged in a float type carburetor, the

- A) engine will idle rough.
- B) engine will not idle.
- C) idle mixture becomes richer.

335. M04P AMP

Which of the following is NOT an input parameter for a turbine engine fuel control unit?

- A) Compressor inlet.
- B) Compressor inlet temperature.
- C) Exhaust gas temperature.

336. 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.

337. 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.

338. 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.

339. 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.

340. 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.

341. 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.

342. 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.

343. 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.

344. 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.

345. M04P AMP

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

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

346. 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.

347. M04P AMP

During idle mixture adjustments, which of the following is normally observed to determine when the correct mixture setting has been achieved?

- A) Change in fuel/air pressure ratio.
- B) Change in fuel flowmeter.
- C) Change in RPM or manifold pressure.

348. 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.

349. 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.

350. 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.

351. 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.

352. 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.

353. 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.

354. N02P AMP

A rotary vane pump is best described as a

- A) positive-displacement pump.
- B) variable-displacement pump.
- C) boost pump.

355. 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.

356. 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.

357. 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.

358. 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.

359. 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.

360. 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.

361. 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.

362. N02P AMP

What is the purpose of a data plate speed check on a turbine engine?

- A) Comparison of future performance against original test cell performance.
- B) Comparison of future thrust output at altitude against thrust output at sea level.
- C) Comparison of future thrust requirements at the next test cell check.

363. 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.

364. N02P AMP

How often should float carburetors be overhauled?

- A) At engine overhaul.
- B) Annually.
- C) At engine change.

365. N02P AMP

Who is authorized to perform the overhaul of a carburetor?

- A) A certified repair station rated to overhaul engines.
- B) A certificated powerplant mechanic.
- C) A certificated repair station certified to overhaul aircraft.

366. 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.

367. 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.

368. N02P AMP

Excessively rich or lean idle mixtures result in

- A) too rapid completion of combustion.
- B) incomplete combustion.
- C) incomplete cylinder scavenging.

369. 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.

370. N02P AMP

Which of the following turbine fuel filters has the greatest filtering action?

- A) Micron.
- B) Small wire mesh.
- C) Stacked charcoal.

371. N02P 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.

378. 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.

379. O03P AMP

Carburetor de-ice heat is not generally used on takeoff unless absolutely necessary because of the

- A) loss of power due to decreased volumetric efficiency.
- B) possibility of high cylinder head temperatures.
- C) inability of the engine to supply excessive rated takeoff power.

380. O03P AMP

On small aircraft engines, fuel vaporization may be increased by

- A) cooling the fuel/air mixture before it enters the engine.
- B) circulating the fuel/air mixture through passages in the oil sump.
- C) heating the fuel before it enters the carburetor.

381. 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.

382. 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.

383. O03P AMP

When operating an engine, the application of carburetor heat will have what effect on the fuel/air mixture?

- A) Enriching the mixture because the AMC cannot make a correction for increased temperature.
- B) Enriching the mixture until the AMC can make a compensation.
- C) Leaning the mixture until the AMC can make a compensation.

384. O03P AMP

The application of carburetor heat will have which of the following effects?

- A) The manifold pressure will be increased.
- B) The mixture will become leaner.
- C) The mixture will become richer.

385. 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.

386. O03P AMP

The application of carburetor heat during engine operation will

- A) decrease the weight of the fuel/air charge in the cylinder.
- B) decrease the volume of fuel/air charge in the cylinder.
- C) increase the density of fuel/air charge in the cylinder.

387. O03P AMP

The action of a carburetor air scoop 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.

388. P02P AMP

Increased engine heat will cause volumetric efficiency to

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

389. 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.

390. 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.

391. P02P AMP

The undersides of pistons are frequently finned. The principal reason is to

- A) provide sludge chambers and sediment traps.
- B) provide for greater heat transfer to the engine oil.
- C) support ring grooves and piston pins.

392. 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.

393. 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.

394. 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).

395. 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.

396. 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.

397. 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.

398. 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.

399. 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.

400. 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.

401. 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.

402. 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.

403. 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.

404. P02P AMP

The component in a dual compressor aircraft gas turbine engine that operates at the highest temperature is the

- A) N2 turbine nozzle diaphragm.
- B) N2 turbine rotor disk.
- C) N2 compressor rotor.

405. 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.

406. Q02P AMP

All of the following are recommended markers for reciprocating engine exhaust systems except

- A) India ink.
- B) lead pencil.
- C) Prussian blue.

407. Q02P AMP

The augments tubes system is part of which reciprocating engine system?

- A) Induction.
- B) Exhaust.
- C) Turbocharger.

408. 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.

409. 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.

410. 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.

411. 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.

412. 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.

413. 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.

414. 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.

415. 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.

416. 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.

417. Q02P AMP

The density controller on some small engines is designed to sense the density of the air after it has passed through the turbocharger; the air pressure between the turbocharger and the throttle valve is called

- A) turbocharger boost pressure.
- B) induction manifold pressure.
- C) deck pressure.

418. Q02P AMP

The absolute density controller on some small engines is designed to sense the density of the air after it has passed through the turbocharger; the air pressure between the turbocharger and the throttle valve is called

- A) turbocharger boost pressure.
- B) induction manifold pressure.
- C) upper deck pressure.

419. Q02P AMP

How should ceramic coated exhaust components be cleaned?

- A) With alkali.
- B) By degreasing.
- C) By mechanical means.

420. 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.

421. 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.

422. 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.

423. 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.

424. 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.

425. R05P AMP

During which of the following conditions of flight will the blade pitch angle of a constant speed propeller be the greatest?

- A) Takeoff power.
- B) Climb power
- C) Cruise power.

426. R05P AMP

How is the propeller controlled on a turboprop powered aircraft?

- A) Independently of the engine.
- B) By the engine condition lever.

C) By the engine power lever.

427. 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.

428. 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.

429. R05P AMP

Propeller blade stations are measured from the

- A) index mark on the blade shank.
- B) hub centerline.
- C) blade base.

430. 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.

431. 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.

432. 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.

433. 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.

434. R05P AMP

Propellers exposed to salt spray should be flushed with

- A) stoddard solvent.
- B) fresh water.
- C) soapy water.

435. 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.

436. 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.

437. R05P AMP

The pitch changing mechanisms of a hydraulic propeller is lubricated by

- A) the engine oil supply.
- B) using an approved type grease at intervals prescribed by the propeller manufacturer.
- C) the pitch changing oil supply.

438. R05P AMP

The aerodynamic force acting on a rotating propeller blade operating at a normal pitch angle tends to

- A) reduce the pitch angle.
- B) increase the pitch angle.
- C) increase the blade angle toward the reverse position.

439. 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.

440. 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.

441. 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.

442. 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.

443. 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.

444. R05P AMP

Propeller blade station numbers increase from

- A) hub center line to tip.
- B) tip to hub center line.
- C) blade shank butt to tip.

445. R05P AMP

Blade angle is an angle formed by a line perpendicular to the crankshaft and a line formed by the

- A) relative wind.
- B) chord of the blade.
- C) blade face.

446. 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.

447. 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.

448. R05P AMP

How does the aerodynamic twisting force affect operating propeller blades?

- A) It tends to turn the blades to a high blade angle.
- B) It tends to bend the blades forward.
- C) It tends to turn the blades to a low blade angle.

449. R05P AMP

On some aircraft turboprop engines at shutdown, how are the propeller blades held in the low blade angle position?

- A) With the start auto release lockpins.
- B) With the start lockpins.
- C) With the start lock feather pins.

450. 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.

451. 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.

452. R05P AMP

On some turbine engines at shutdown, how are the propeller blades held in the low blade angle position?

- A) With the start auto release lockpins.
- B) With the start lockpins.
- C) With the start lock feather pins.

453. 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.

454. R05P AMP

Free turbine engines are normally started with the propeller in what position?

- A) Feathered position.
- B) Full reverse position.
- C) High pitch position.

455. 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.

456. 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.

457. 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.

458. 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.

459. R05P AMP

The bolt torquing sequence required when installing a propeller on a flanged crank-shaft is

- A) In a crossing pattern.
- B) In a sequential counterclockwise order only.
- C) In a clockwise direction, skipping every other bolt.

460. 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.

461. 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.

462. 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.

463. 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.

464. 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.

465. 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.

466. 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.

467. 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.

468. 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.

469. 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.

470. 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.

471. 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.

472. R06P AMP

How does the propeller overspeed governor on turboprop engine decrease propeller RPM?

- A) By allowing oil to escape from the propeller hub thus driving the blades to a increased blade angle.
- B) By increasing oil pressure in the propeller thus driving the blades to a increased blade angle.
- C) By reducing fuel flow to the fuel control thus driving the blades to a increased blade angle.

473. 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.

474. 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.

475. R06P AMP

The autofeather system determines the need to feather the propeller by monitoring

- A) propeller blade angles.
- B) engine torque pressure.
- C) propeller RPM.

476. 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.

477. 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.

478. R06P AMP

During propeller Beta operations, the propeller governor mechanism is kept in what position?

- A) Overspeed.
- B) Underspeed.
- C) Onspeed.

479. 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.

480. R06P AMP

The propeller autofeather system when armed will feather

- A) only in landing operations.
- B) only one propeller.

C) both propellers at once.

481. 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.

482. 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).

483. 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.

484. 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.

485. 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.

486. 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.

487. 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.

488. 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.

489. R06P AMP

What operates the Beta control valve?

- A) a linkage operated by the Beta control lever.
- B) a linkage operated by the condition lever.
- C) a linkage operated by the power lever.

490. 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.

491. 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.

492. 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.

493. 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.

494. 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.

495. 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.

496. 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.

497. R07P AMP

Aircraft propeller blade diameter limits are found in what document?

- A) Aircraft type certificate data sheet.
- B) Propeller type certificate data sheet.
- C) FAA-approved certified repair station data sheet.

498. 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.

499. 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.

500. 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.

501. 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.

502. 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.

503. 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.

504. 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.

505.

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.