Question block created by wizard

1. In a 2-stroke diesel engine there is a powerstroke:

- o (a) In every cylinder every 4 revolutions.
- o (b) In one cylinder for every revolution.
- • (c) In every cylinder for every revolution.

If choice c is selected set score to 1.

2. What type of ice would normally form on the intake?

- o (a) Evaporation ice.
- • (b) Impact ice.
- o (c) Throttle ice.

If choice b is selected set score to 1.

3. What is the result of worn piston rings?

- o (a) Bad fuel metering.
- o (b) Backfiring.
- • (c) Compression loss.

If choice c is selected set score to 1.

4. Thermocouple leads

- • (a) are designed for a specific installation and may not be altered.
- o (b) may be repaired using solderless connectors.
- o (c) may be installed with either lead to either post of the indicator.

If choice a is selected set score to 1.

5. Which component is <u>not</u> part of a FADEC?

- o (a) Ignition system.
- • (b) Carburettor.
- o (c) Engine control unit.

If choice b is selected set score to 1.

6. The alternative-air valve is only installed on aircraft fitted with....

- o (a) fuel ejection system.
- • (b) air intake temperature gauge.
- o (c) radial engine.

If choice b is selected set score to 1.

7. What type of temperature sensor is used for measuring the cylinder head temperature?

- • (a) Thermocouple
- o (b) Temperature bulb
- o (c) Temperature probe

If choice a is selected set score to 1.

8. What type of control systems are used to operate engine systems?

- o (a) Bowden cable.
- • (b) Teleflex.
- o (c) Push-pull control rods.

If choice b is selected set score to 1.

9. The usual expression of total cylinder power output is also known as....

- o (a) break mean effective power (BMEP).
- • (b) indicated mean effective power (IMEP).
- o (c) friction mean effective power (FMEP).

If choice b is selected set score to 1.

10. The measure of load expressed in pound-inches (lb-in) or pound feet (lb-ft) is known as....

- o (a) work.
- • (b) torque.
- o (c) FHP (Friction Horse Power).

If choice b is selected set score to 1.

11. The regulator in a fuel injection system of two main sections contains....

- o (a) air only.
- o (b) fuel only.
- • (c) air and fuel.

If choice c is selected set score to 1.

12. Some cylinder barrels are hardened by

- • (a) nitriding.
- o (b) shot peening.
- o (c) tempering.

If choice a is selected set score to 1.

13. The manifold pressure changes during engine operation. What is the cause for these changes?

- o (a) The cause for changing the manifold pressure is air inlet temperature.
- • (b) The cause for changing the manifold pressure is the position of the throttle valve. (engine speed)
- o (c) The cause for changing the manifold pressure is the aircraft's attitude.

If choice b is selected set score to 1.

14. Compression ratio is the ratio between the

- • (a) cylinder volume with piston at bottom dead center and at top dead center.
- o (b) combustion chamber pressure on the combustion stroke and on the exhaust stroke.
- o (c) piston travel on the compression stroke and on the intake stroke.

If choice a is selected set score to 1.

15. Prolonged idling of an engine will usually result in

- o (a) increased oil consumption.
- o (b) excessive cylinder head temperatures.
- • (c) foreign material buildup on spark plugs.

If choice c is selected set score to 1.

16. On an aerobatic aircraft with a piston engine, what type of lubrication system is used?

- o (a) Wet sump system.

- (b) Closed loop system.
- (c) Dry sump system.

If choice c is selected set score to 1.

17. What is used to energize the engaging lever for cranking the engine, in a pre-engaged starter?

- (a) A manual engaging lever.
- (b) A solenoid.
- (c) A flywheel.

If choice b is selected set score to 1.

18. The AC powered tachometer relates RPM to....

- (a) current (Amps)
- (b) frequency (Hertz)
- (c) voltage (Volts)

If choice b is selected set score to 1.

19. Bootstrapping in a turbo charger system is....

- (a) dangerous on high altitude.
- (b) reduced with a differential pressure controler.
- (c) maintenance discrepancy.

If choice b is selected set score to 1.

20. Which system does not control the waste gate position?

- (a) Absolute pressure controller.
- (b) Differential oil pressure controller.
- (c) Throttle system.

If choice c is selected set score to 1.

21. The intercooler cools the air between the turbo compressor and the cylinder. This cooling is necessary to prevent....

- (a) cylinder head over-heating
- (b) cylinder over-boosting.

- (c) detonation.

If choice c is selected set score to 1.

22. Which of the following, is part of an engine inspection?

- (a) Open all cowlings.

o (b) Engine must be removed.
o (c) Engine must be dirty.

If choice a is selected set score to 1.

23. Where is the cylinder head temperature thermocouple located?

- (a) In the hottest cylinder head.

o (b) In every cylinder body.
o (c) In the hottest piston.

If choice a is selected set score to 1.

24. An extreme rich mixture can be identified by?

- (a) Black smoke coming from the exhaust

o (b) Popping back through the carburettor (back-fire)
o (c) Blue smoke coming from the exhaust

If choice a is selected set score to 1.

25. Why must the muffler around the exhaust be checked frequently?

o (a) Danger of fuel entering the exhaust system.

- (b) Danger of exhaust gasses entering the cabin.

o (c) Danger of exhaust gasses entering the carburetor.

If choice b is selected set score to 1.

26. What is the result of too much valve clearance?

- (a) Too rich mixture.

o (b) Too lean mixture.
o (c) There is no difference.

If choice a is selected set score to 1.

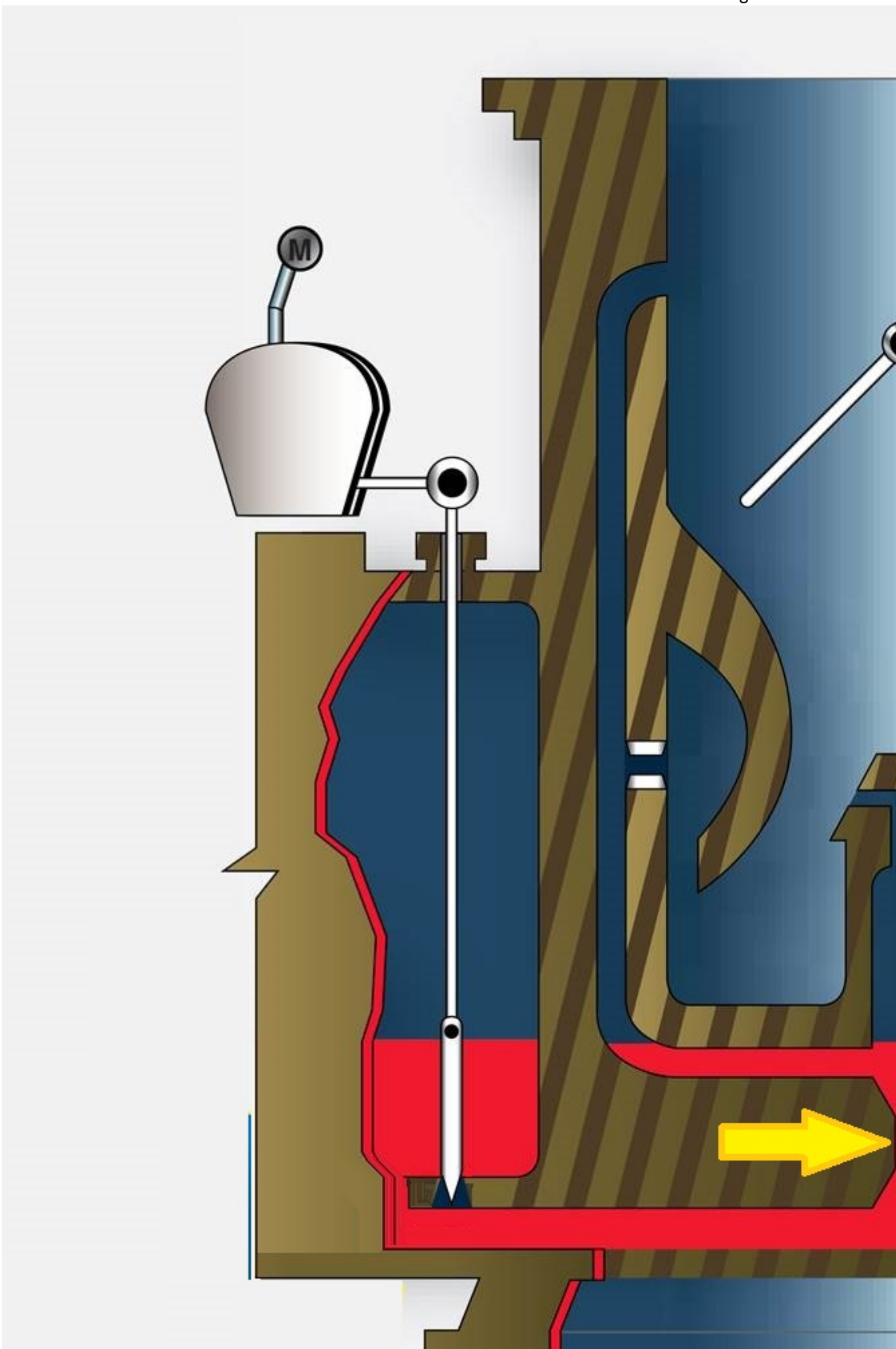
27. Where does the oil pump draw fresh oil on a wet sump lubricating system?

- (a) From the sump at the bottom of the engine.

o (b) From the sump at the top of the engine.
o (c) From the bottom of an oil tank.

If choice a is selected set score to 1.

28. Which part of the picture is depicted with an arrow?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- (a) This the main metering jet.

o (b) This is the main air bleed.
o (c) This is the fuel discharge nozzle.

If choice a is selected set score to 1.

29. Excessive heat is undesirable in any internal combustion engine for three principal reasons.

Which answer gives one of these reasons?

- (a) It affects the behaviour of the combustion of the fuel/air charge.

o (b) It is affecting the lubrication positively.
o (c) It will harden engine parts and shortens their life.

If choice a is selected set score to 1.

30. The discharge nozzle in a fuel injection system is located....

- (a) downstream of the throttle valve.

o (b) inside the fuel pressure pomp.
o (c) in front of the throttle valve.

If choice a is selected set score to 1.

31. Excessive heat is undesirable in any internal combustion engine for three principal reasons.

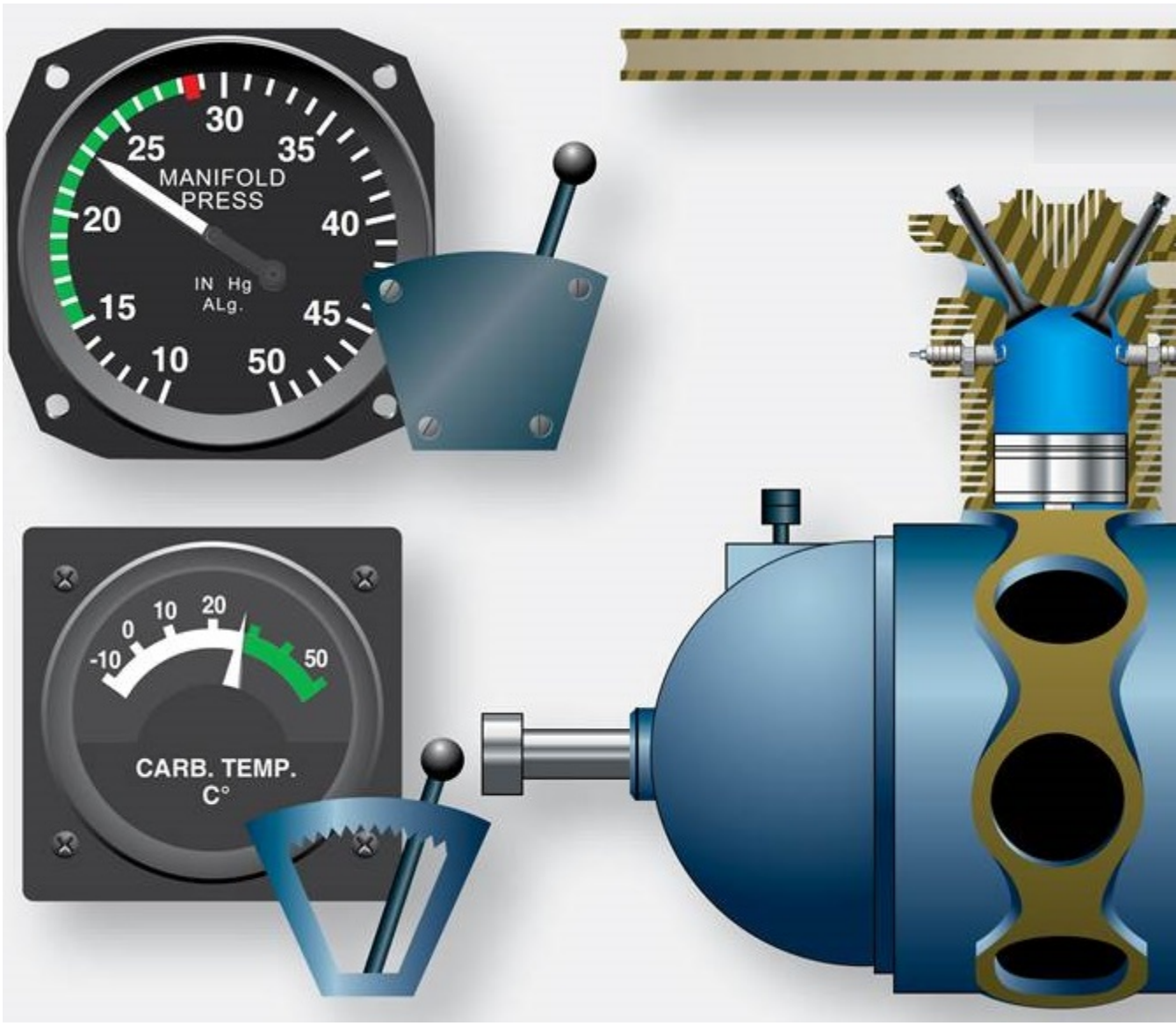
Which answer gives one of these reasons?

o (a) It does not affect the behaviour of the combustion of the fuel/air charge.
o (b) It is affecting the lubrication positively.

- (c) It weakens and shortens the life of engine parts.

If choice c is selected set score to 1.

32. Recognize the type of charger?



- o (a) Compoundcharger
- • (b) Supercharger
- o (c) Turbocharger

If choice b is selected set score to 1.

33. Where would you find the discharge nozzle on a float injection carburettor?

- o (a) Upstream of the throttle valve, in the throttle body.
- o (b) Inside the flood chamber.
- • (c) Downstream of the throttle valve, in the throttle body.

If choice c is selected set score to 1.

34. What controls the airflow through the carburetor?

- (a) Throttle butterfly valve.

o (b) Venturi.
o (c) Float operated needle valve.

If choice a is selected set score to 1.

35. The power delivered to the shaft of a propellor is called:

o (a) Brake horsepower.

- (b) Shaft horsepower.

o (c) True horsepower.

If choice b is selected set score to 1.

36. The fuel flow to a piston engine will vary according to:

- (a) The R.P.M., the throttle position and the mixture setting.

o (b) The R.P.M, and the throttle position only.
o (c) The R.P.M, and the mixture setting only

If choice a is selected set score to 1.

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

o (a) A power increase by shorting the exhaust event.

- (b) Reduced valve overlap period.

o (c) Intake and exhaust valves will open early and close late.

If choice b is selected set score to 1.

38. What controls the supply of fuel from the aircraft tanks to the carburetor?

o (a) Throttle valve.

- (b) Float operated needle valve.

o (c) Venturi.

If choice b is selected set score to 1.

39. One of the items in the engine shut-down procedures is the position of the engine cawling flaps. What should the position of the cowling flaps normally be?

During engine shut down the position of the cowling flaps is....

- (a) full open.

o (b) full closed.
o (c) not an item .

If choice a is selected set score to 1.

40. One of the functions of a FADEC on a reciprocating engine is?

- (a) Adjust ignition timing.

o (b) Adjust engine oil pressure.
o (c) Adjust the induction air temperature.

If choice a is selected set score to 1.

41. Compared to Naturally aspirated engines, normalizer turbo charged engines exhaust system operates at....

o (a) similar temperature and higher pressure.
o (b) higher temperature and higher pressure.

- (c) similar temperature and pressure.

If choice c is selected set score to 1.

42. What is the approximate thermal efficiency of a piston engine?

o (a) 80 to 95%
o (b) 20 to 25%

- (c) 30 to 35%

If choice c is selected set score to 1.

43. What are the cycles of a 2-stroke engine?

o (a) Induction - exhaust

- (b) Compression - power

o (c) Induction - power

If choice b is selected set score to 1.

44. Which parameters are compared during a ground run to evaluate the performance of the engine?

- (a) Manifold pressure with RPM.

o (b) Manifold pressure with cylinder head temperature.
o (c) Throttle position with RPM.

If choice a is selected set score to 1.

45. By which means is the carburetor accelerator pump activated?

o (a) The float chamber
o (b) The throttle

- (c) The throttle control

If choice c is selected set score to 1.

46. Special care should be taken during the de-preservation of an engine. What has to be done with the preservation oil?

o (a) It is necessary to remove the preservation oil by dismanteling the engine and cleaning all engine parts.

- (b) It is necessary to remove the preservation oil and service the engine with oil in accordance with the manufacturer's instruction.

o (c) It is not necessary to remove the preservation oil. It burns during the engine test-run.

If choice b is selected set score to 1.

47. A manifold pressure gauge is designed to

o (a) maintain constant pressure in the intake manifold.

- (b) indicate absolute pressure in the intake manifold.

o (c) indicate differential pressure between the intake manifold and atmospheric pressure.

If choice b is selected set score to 1.

48. What is installed in the oil system to detect abnormal wear of metal components?

- (a) Chip detector.

o (b) Oil dipstick.
o (c) Screen.

If choice a is selected set score to 1.

49. State why ice build-up at high altitude is less commen than at low attitude.

- o (a) At high altitude the speed of the airplane is more.
- o (b) At high altitude is the power setting high.
- • (c) At high altitude is less humidity in the air.

If choice c is selected set score to 1.

50. What is tested during a high tension lead harness test?

- o (a) Resistance.
- • (b) Conductivity and resistance.
- o (c) Conductivity

If choice b is selected set score to 1.

51. The length of the stroke is....

- o (a) determined by the size of the piston,
- o (b) equal to the length of the connecting rod.
- • (c) the distance between TDC and BDC.

If choice c is selected set score to 1.

52. During ignition system operational test the RPM drops quickly. What could be the cause?

- o (a) Ignition timing.
- o (b) Lean fuel mixture.
- • (c) Faulty spark plug.

If choice c is selected set score to 1.

53. When a sudden stoppage of an engine occurs, what is the best corrective maintenance?

- o (a) Performa a compression test.
- o (b) Perform a visual inspection.
- • (c) Replace engine.

If choice c is selected set score to 1.

54. Which statement is false?

- o (a) A Fadec system is a dual fully redundant system.
- o (b) A command inputs to a Fadec are duplicated.

- (c) A Fadec system can be switched off to control the engine manually.

If choice c is selected set score to 1.

55. Which of the following components is mounted **in** the cylinder head?

- o (a) Camshaft
- o (b) Connecting rod
- (c) Exhaust valve

If choice c is selected set score to 1.

56. The four events of a four-stroke cycle engine in the order of their occurrence are....

- (a) intake, compression, ignition, power/exhaust.
- o (b) intake, ignition, compression, power/exhaust.
- o (c) intake, power, compression, ignition/exhaust.

If choice a is selected set score to 1.

57. What is the purpose of a turbocharger system for a small reciprocating aircraft engine?

- (a) Compresses air to maintain manifold pressure constant from sea level to the critical altitude of the engine.
- o (b) Compresses the air to hold the cabin pressure constant after the aircraft has reached its critical altitude.
- o (c) Maintains constant air velocity in the intake manifold.

If choice a is selected set score to 1.

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

- o (a) Fuel is injected directly into the inlet manifold.
- (b) Fuel is injected at each cylinder intake port.
- o (c) Two injector nozzles are used in the injector fuel system for various speeds.

If choice b is selected set score to 1.

59. How is starting fuel provided in an piston aircraft engine?

- o (a) Starting fuel in a piston aircraft engine is provided by the engine driven fuel pump.
- (b) Starting fuel in a piston aircraft engine is provided by the primer or boost pump.
- o (c) Starting fuel in a piston aircraft engine is provided by the starting pump.

If choice b is selected set score to 1.

60. What is the best correction method to prevent after-firing?

- o (a) Performing a compression test
- • (b) Adjustment of the fuel/air mixture.
- o (c) Adjust idle speed.

If choice b is selected set score to 1.

61. Which instrument tells the pilot about the ice build up in the float type carburettor?

- o (a) Outside air temperature
- • (b) Intake temperature gauge
- o (c) Ice detector

If choice b is selected set score to 1.

62. What is the danger of using the engine exhaust system for cabin heating?

- o (a) Overheating the cabin
- o (b) Losing engine performance
- • (c) Carbon monoxide poisoning

If choice c is selected set score to 1.

63. On light aircraft, what is the exhaust system additionally used for?

- o (a) Anti-icing the aircraft.
- o (b) Ventilating the engine compartment.
- • (c) Heating the cabin.

If choice c is selected set score to 1.

64. One cause of afterfiring in an aircraft engine is

- • (a) an excessively rich mixture.
- o (b) an excessively lean mixture.
- o (c) sticking intake valves.

If choice a is selected set score to 1.

65. The waste-gate actuator is a important component. Therefore the operation of this actuator is provided with :

o (a) exhaust gasses.

• (b) pressurized engine oil.

o (c) the turbo oil system.

If choice b is selected set score to 1.

66. Small metal particles are found on the magnetic chip detector during oil service.

How should you act as an technician?

o (a) Ground aircraft and replace the engine for overhaul.

• (b) Replace oil, make a ground run and check the chip detector again.

o (c) Inspect oil screens and if no evidence is found, continue operation.

If choice b is selected set score to 1.

67. Does an engine equiped with a FADEC system needs magnetos?

o (a) An engine equiped with a FADEC needs one magneto as back-up.
o (b) An engine equiped with a FADEC needs two magnetos ignition is electronic.

• (c) An engine equiped with a FADEC needs no magnetos, ignition is electronic.

If choice c is selected set score to 1.

68. The result of the engine and propeller working together is called....

o (a) indicated horsepower.

• (b) thrust horsepower.

o (c) shaft horsepower.

If choice b is selected set score to 1.

69. What is the name of this component?

- o (a) Starter
- o (b) Igniter

- • (c) Magneto

If choice c is selected set score to 1.

70. What are the main component(s) used to clean lubrication oil?

- • (a) Oil filter and chip detector.

- o (b) Oil filter.
- o (c) Oil filter and oil cooler.

If choice a is selected set score to 1.

71. The most popular aircraft piston engine is the opposed engine. What is one of the biggest advantage of this type of engine?

The biggest advantages of this engine are....

- • (a) the low vibration characteristics.

- o (b) that it has two banks of cylinders.
- o (c) that the pistons of both cylinder banks are connected to the single crankshaft.

If choice a is selected set score to 1.

72. Reduced air density at high altitude has an effect on carburation, resulting in a reduction of engine power by

- o (a) reducing fuel vaporization.
- o (b) excessively leaning the air/fuel mixture.

- • (c) excessively enriching the air/fuel mixture.

If choice c is selected set score to 1.

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

- o (a) improper scavenging of exhaust gases.
- • (b) backfiring into the induction system..
- o (c) engine kickback.

If choice b is selected set score to 1.

74. What is the effect of altitude on air density?

- o (a) The air density increases with increasing altitude.
- o (b) The air density remains the same for all altitudes.
- • (c) The air density decreases with increasing altitude.

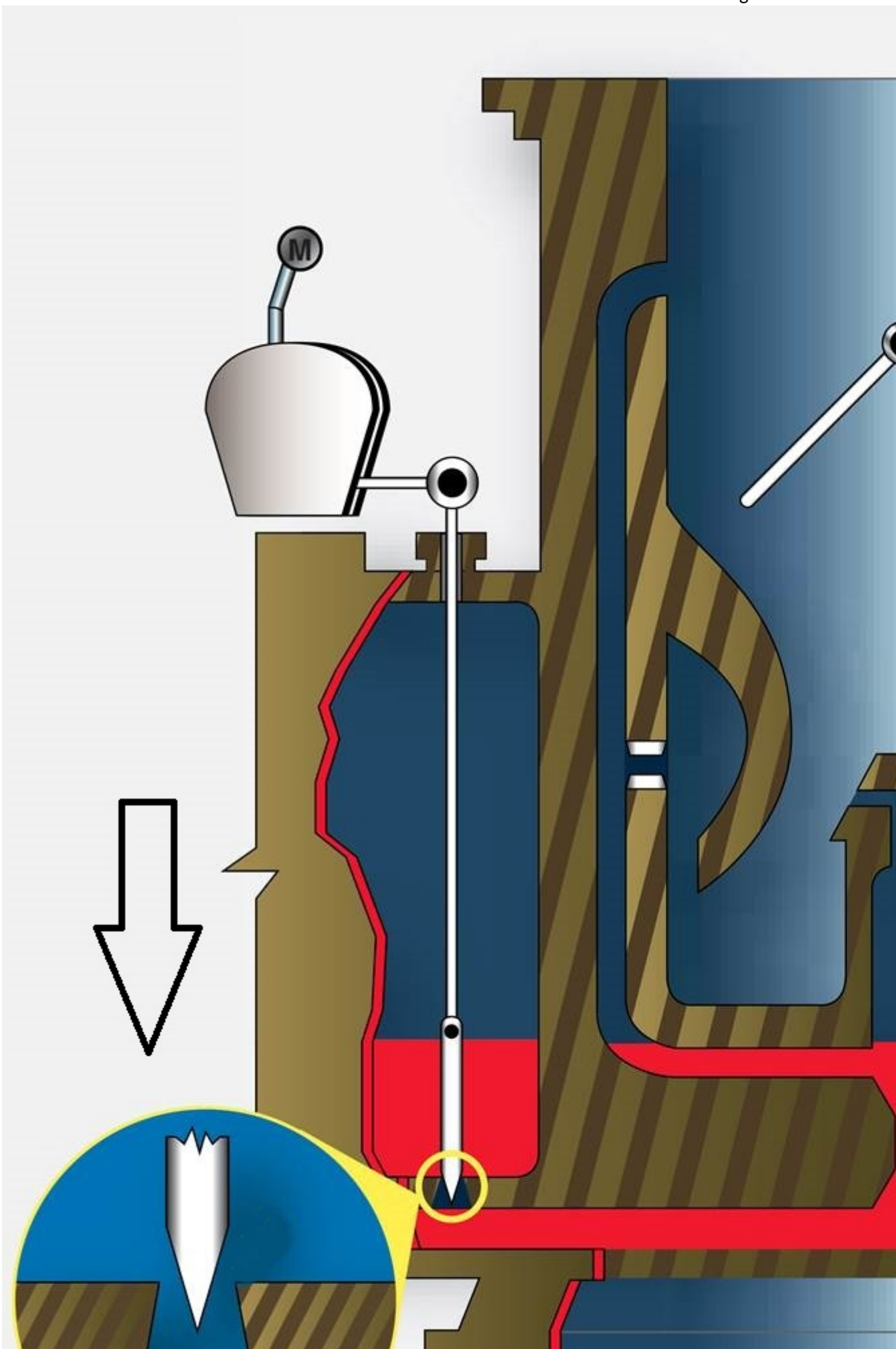
If choice c is selected set score to 1.

75. The electronic control unit of a FADEC system communicates with what other systems?

- • (a) Aircraft, engine sensors, engine control and other channel in ECU.
- o (b) Aircraft and engine systems.
- o (c) Other channels in ECU and engine sensors.

If choice a is selected set score to 1.

76. What is shown in the detail of the picture?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- o (a) The enrichment mechanism.
- o (b) The accelerating pump control mechanism.
- • (c) The mixture control mechanisme.

If choice c is selected set score to 1.

77. What is the most important feature of a crankcase?

- o (a) Low weight.
- • (b) High strength.
- o (c) Easy construction.

If choice b is selected set score to 1.

78. The voltage induced in the secondary winding in a Magneto depends on?

- • (a) number of turns in the primary winding
- o (b) the number of magnets
- o (c) number of turns in the secondary winding

If choice a is selected set score to 1.

79. A FADEC system communicates between other computers using what other type of system?

- o (a) Analog wiring.
- o (b) Ethernet.
- • (c) Digital databus.

If choice c is selected set score to 1.

80. Excessive heat is undesirable in any internal combustion engine for three principal reasons.

Which answer gives one of these reasons?

- o (a) It does not affect the behaviour of the combustion of the fuel/air charge.
- • (b) It harms lubrication.
- o (c) It will harden engine parts and shortens their life.

If choice b is selected set score to 1.

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

- • (a) The oil pressure will be higher than normal.

- o (b) The oil temperature and oil pressure will be higher than normal.
- o (c) The oil pressure will be lower than normal.

If choice a is selected set score to 1.

82. In the ideal OTTO-cycle, intake valves open or close....

- • (a) Before top dead center (TDC) and bottom dead center (BDC).

- o (b) Precisely at top dead center (TDC) and bottom dead center (BDC).
- o (c) At a timing schedule which depends on the type of engine.

If choice a is selected set score to 1.

83. Compared to a petrol engine, diesel engines are:

- o (a) More complex.

- • (b) More reliable.

- o (c) Less fuel efficient.

If choice b is selected set score to 1.

84. What drives the roots supercharger?

- o (a) THe exhaust gasses via a turbine.

- • (b) The engine directly.

- o (c) An electric motor.

If choice b is selected set score to 1.

85. By which input is the waste gate of a turbocharger positioned?

- • (a) Engine lubrication system.

- o (b) Fuel pressure.
- o (c) Air pressure from the turbocharger.

If choice a is selected set score to 1.

86. If an engine is placed in temporary or indefinite storage, what is the correct action?

- o (a) The engine should be run for at least one hour before storage.
- o (b) All oil has to be removed so that there is no change for water condensation.

- • (c) The engine should filled and operated with corrosion-preventive oil mixture.

If choice c is selected set score to 1.

87. How is the oil cooler in case of high oil pressure protected against blow up ?

- o (a) A check valve.
- • (b) A surge valve built into the oil cooler.
- o (c) A bypass valve at the oil pump.

If choice b is selected set score to 1.

88. A unit that keeps fuel under pressure and shuts off the individual nozzle lines when the control is placed in idle cut off is known as....

- o (a) fuel metering section.
- • (b) flow devider.
- o (c) regulator section.

If choice b is selected set score to 1.

89. The inlet valve opens before T.D.C, in the exhaust stroke to:

- o (a) Reduce engine vibration.
- o (b) Increase the pressure in the cylinder on completion of the induction stroke.
- • (c) Induce a greater amount of mixture into the cylinder.

If choice c is selected set score to 1.

90. A propeller reduction gear is fitted:

- • (a) Between the crankshaft and propeller.
- o (b) Between the camshaft and the propeller.
- o (c) Between the connecting rod and the crankshaft.

If choice a is selected set score to 1.

91. When using an electric starter motor, current usage....

- o (a) remains relatively constant throughout the starting cycle.
- o (b) is highest just before starter cut-off (at highest RPM).
- • (c) is highest at the start of motor rotation.

If choice c is selected set score to 1.

92. Operating flexibility is stated as....

- (a) ability of an engine to run smoothly at various RPM/load settings.

o (b) shape and size of an engine.
o (c) fuel consumption of an engine.

If choice a is selected set score to 1.

93. A FADEC system is a system with only one moving part.

This moving part is to open and close....

- (a) the fuel injector.

o (b) the breaker points from the ignition.
o (c) the mixture control.

If choice a is selected set score to 1.

94. By which means is the fuel flow regulated in a float type carburetor?

o (a) Main jet.
o (b) Throttle valve.

- (c) Needle valve.

If choice c is selected set score to 1.

95. The economizer system in a float type carburettor.

o (a) functions only at cruise and idle speeds.
o (b) keeps the fuel/air ratio constant.

- (c) increases the fuel/air ratio at high power settings.

If choice c is selected set score to 1.

96. Where does the power of an internal combustion engine come from?

- (a) From burning a fuel/air mixture in a small enclosed space

o (b) From burning pure fuel in a small enclosed space
o (c) From burning a fuel/air micture in a small open space

If choice a is selected set score to 1.

97. What method is ordinarily used to make idle speed adjustments?

o (a) An adjustable needle in the drilled passageway which connects the airspace of the float chamber and the carburettor venturi.

- (b) An adjustable throttle stop or linkage.

o (c) An orifice and adjustable tapered needle.

If choice b is selected set score to 1.

98. What are the negative aspects of a float chamber carburetor?

o (a) Cheap and simple

- (b) Sensative to icing and flight maneuvers

o (c) Expensive and unreliable

If choice b is selected set score to 1.

99. When is a straight grade oil used?

o (a) When the engine is a 2-stroke engine.
o (b) When the aircraft is operated in very cold environments.

- (c) When a new engine needs breaking-in.

If choice c is selected set score to 1.

100. The amount of electrical current going through the cables connecting the battery to the starter depends on the....

o (a) size of the engine.
o (b) size of the propellor.

- (c) starting torque of the engine.

If choice c is selected set score to 1.

101. One of the functions of a crankshaft sensor on a reciprocating engine is?

o (a) Adjust the induction air temperature.

- (b) Sense crankshaft position for top-dead centre.

o (c) Check manifold pressure.

If choice b is selected set score to 1.

102. Fuel pressure is calibrated in:

o (a) Pounds per hour.
o (b) Bar.

- (c) Pounds per square inch.

If choice c is selected set score to 1.

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

o (a) Cowling air seal leakage.
o (b) A cracked cylinder baffle.

• (c) A cooling fin broken off.

If choice c is selected set score to 1.

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

o (a) equalize valve face loading.

• (b) eliminate valve spring surge.

o (c) equalize side pressure on the valve stems.

If choice b is selected set score to 1.

105. Typical firing order of a four-stroke engine is....

• (a) 1, 3, 2, 4

o (b) 4, 2, 3, 1
o (c) 2, 3, 4, 1

If choice a is selected set score to 1.

106. If a cylinder is defined as 3 1/2 x 4inch, what is the 4-inch?

o (a) Bore

• (b) Stroke

o (c) Diameter

If choice b is selected set score to 1.

107. What does the carburater control?

• (a) The amount of air.

o (b) The density of air.
o (c) The temperature of air.

If choice a is selected set score to 1.

108. The pressure of an airflow through a venture will:

- (a) Drop

o (b) Increase
o (c) Stay the same

If choice a is selected set score to 1.

109. What happens to the power of an aspirated engine when the aircraft climbs?

- (a) The engine power will decrease due to the lower atmospheric pressure.

o (b) Nothing.
o (c) The engine power will increase due to the colder air.

If choice a is selected set score to 1.

110. In some aircraft engine control installations, friction clutches are used. What is the purpose of these friction clutches?

o (a) To give the pilot artificial feel over the control.
o (b) To avoid play or slack in the engine controls.

- (c) To hold the controls in place.

If choice c is selected set score to 1.

111. A fuel strainer or filter on a fuel injection system must be located between the....

o (a) boost pump and tank outlet.

- (b) tank outlet and the fuel metering device.

o (c) boost pump and engine driven fuel pump.

If choice b is selected set score to 1.

112. Vapor-lock is a phenomenon which mostly may occur:

- (a) in the fuel lines

o (b) in the carburettor
o (c) in the fuel tanks

If choice a is selected set score to 1.

113. What are NACA ducts used for?

o (a) Air scoop for fresh air in the cabin

- (b) Air scoop for cooling engine accessories

o (c) Air intake for cold air to the carburetor or injection system

If choice b is selected set score to 1.

114. What is the positive effect that lead has when added to fuel?

o (a) Makes the engine rune cooler.

- (b) Increases the fuel power output.

o (c) Creates a leaner mixture so less fuel is burned.

If choice b is selected set score to 1.

115. Specific Fuel Consumption (S.F.C.)

- (a) Is the weight of fuel used by an engine per unit horse power per unit time.

o (b) Increases in proportion to the thermal efficiency.
o (c) Becomes greater as the efficiency of the engine improves

If choice a is selected set score to 1.

116. The term Indicated Mean Effective Pressure refers to:

o (a) The maximum working pressure in the engine cylinder.

- (b) The effective working pressure in the cylinder during the power stroke.

o (c) The pressure achieved during compression.

If choice b is selected set score to 1.

117. When will a FADEC switch channels?

o (a) It can not switch channels

- (b) Automatially if the opposite channel has less faults.

o (c) Manually if the opposite channel has less faults

If choice b is selected set score to 1.

118. The purpose of a crankshaft is....

o (a) opening and closing valves.

- (b) transform reciprocating motion into rotational motion.

o (c) provide a place for combustion of the fuel/air mixture.

If choice b is selected set score to 1.

119. The engine is equipped with an exhaust. This type of exhaust is a?

- (a) Collector system

o (b) Augmenter system
o (c) Short stack system

If choice a is selected set score to 1.

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

o (a) To determine if the fuel/air mixture is adequate.

- (b) To determine satisfactory performance.

o (c) To check magneto drop.

If choice b is selected set score to 1.

121. What types of booster coil categories do we have?

o (a) Primary and secondary coils
o (b) High and low voltage coils

- (c) High and low tension coils

If choice c is selected set score to 1.

122. The greater the number and closer spacing of the power impulses reduce the vibrations set up in the crankshaft. When is this effect most effective?

This effect of more power pulses is most effective....

o (a) at high RPM.

• (b) at low RPM.

o (c) from idle to full power.

If choice b is selected set score to 1.

123. What is the principal advantage of using propeller reduction gears?

• (a) To enable the engine RPM to be increased with an accompanying increase in power and allow the propeller to remain at a lower, more efficient RPM.

o (b) To enable the propeller RPM to be increased without an accompanying increase in engine RPM.
o (c) To enable the engine RPM to be increased with an accompanying increase in propeller RPM.

If choice a is selected set score to 1.

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

• (a) Reduced valve operating temperatures.

o (b) Increased strength and resistance to cracking.
o (c) Greater resistance to deterioration at high valve temperatures.

If choice a is selected set score to 1.

125. In what type of control system could you fin walking beams?

o (a) Teleflex control

• (b) Push-pull rod controls.

o (c) Bowden cable controls.

If choice b is selected set score to 1.

126. What is the unit that limits the turbocharger output to a specified maximum pressure?

o (a) Waste gate.

• (b) Absolute pressure controller.

- o (c) Variable pressure controller.

If choice b is selected set score to 1.

127. Humidity of the air is not influenced by....

- (a) atmospheric pressure.

- o (b) amount of water in the air.
- o (c) temperature of the air.

If choice a is selected set score to 1.

128. A higher volumetric efficiency will result in:

- o (a) A higher fuel consumption.
- o (b) A smaller air/fuel mixture.

- (c) A greater air/fuel mixture.

If choice c is selected set score to 1.

129. How is the cold air directed around the cylinders?

- o (a) By using multiple air intakes

- (b) By using deflectors

- o (c) By using a fan

If choice b is selected set score to 1.

130. Which horsepower definition is the theoritical power of a piston engine?

- o (a) Brake horsepower

- (b) Indicated horsepower

- o (c) Shaft horsepower

If choice b is selected set score to 1.

131. Fuel flow divider of an fuel injection systen of an aircraft engine are equiped with pistons to let the metered fuel pas through the fuel nozzles. How are thse pistons operated?

- o (a) By a spring .
- o (b) By metered fuel.

- (c) By a spring and the metered fuel.

If choice c is selected set score to 1.

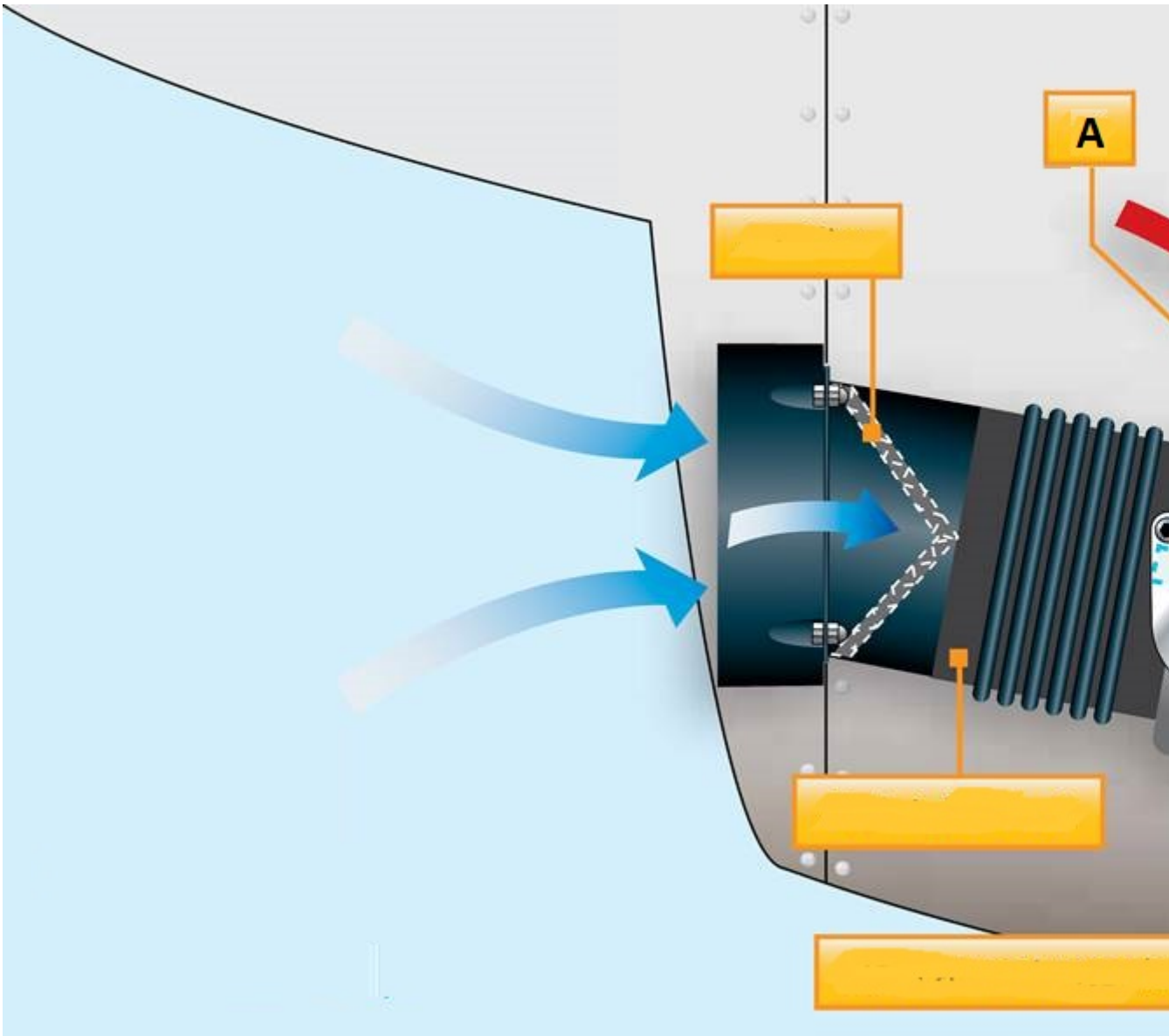
132. Which of the following best describes the function of an altitude mixture control?

o (a) Regulates the air pressure above the fuel in the float chamber.
o (b) Regulates the air pressure in the venturi.

- (c) Regulates the richness of the fuel/air charge entering the engine.

If choice c is selected set score to 1.

133. How is the component called, depicted with A called?



o (a) Hot Air bypass valve

- (b) Carburettor air valve

o (c) Anti-ice valve

If choice b is selected set score to 1.

134. The picture shows a carburettor part, this part is?

- (a) Float chamber

o (b) Throttle valve
o (c) Venturi tube

If choice a is selected set score to 1.

135. A reciprocating engine automatic mixture control responds to changes in air density caused by changes in....

o (a) altitude only.

- (b) altitude or temperature.

o (c) altitude or humidity.

If choice b is selected set score to 1.

136. What is the purpose of valve overlap?

o (a) Improve cooling.
o (b) Increase the amount of fuel/air mixture.

- (c) Both answers are correct.

If choice c is selected set score to 1.

137. The floating control thermostat, used on some reciprocating engine installations, helps regulate oil temperature by

o (a) controlling oil flow through the oil cooler.

- (b) controlling air flow through the oil cooler.

o (c) recirculating hot oil back through the sump.

If choice b is selected set score to 1.

138. What is the name of the lubrication type where a full film of oil separates the crankshaft from its support?

- (a) Elastohydrodynamic lubrication.

o (b) Wet sump lubrication.
o (c) Hydrodynamic lubrication.

If choice a is selected set score to 1.

139. What does "full flow" mean on an aircraft piston engine oil filter?

o (a) The oil flows from the inside to the outside of the filter element.

- (b) All the engine oil goes through the filter element.

o (c) A part of the filter element surface is used.

If choice b is selected set score to 1.

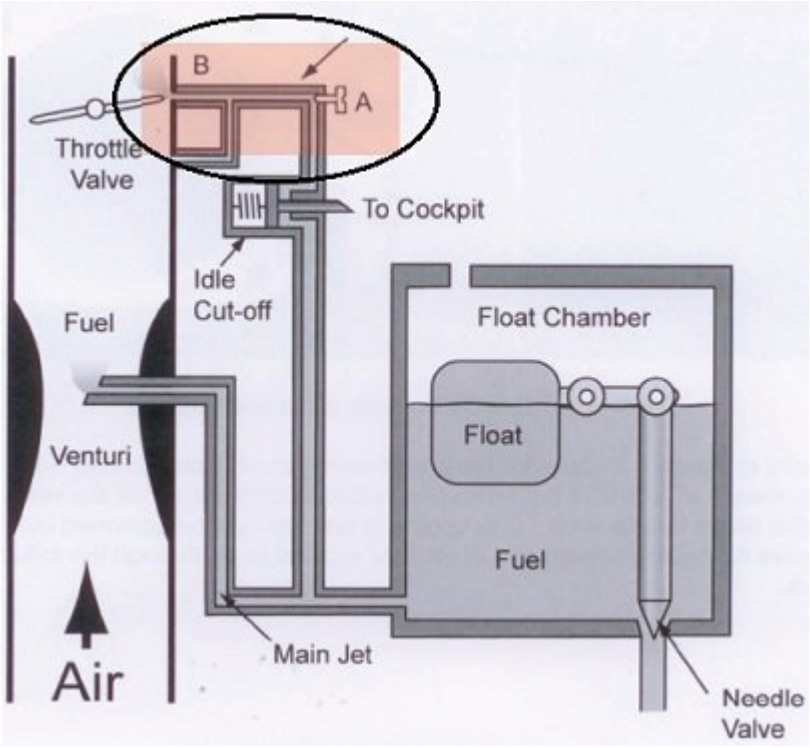
140. What could cause excessive pressure build-up in the crankcase of a reciprocating engine?

- (a) Clogged crankcase breather.

o (b) An excessive quantity of oil.
o (c) Improper warm-up operation.

If choice a is selected set score to 1.

141. What is the component highlighted in the figure below?

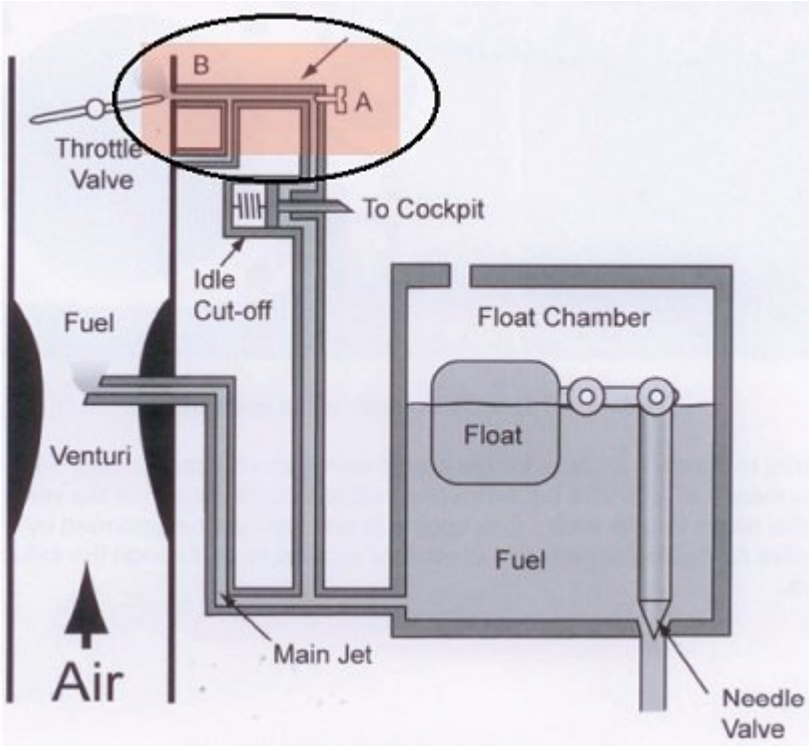


o (a) Main jet
o (b) Acceleration jet

- (c) Idle jet

If choice c is selected set score to 1.

142. What is highlighted in the figure below?



- o (a) Idle cut-off.
- o (b) Needle valve.
- • (c) Idle jet.

If choice c is selected set score to 1.

143. The power output of an internal combustion engine....

- o (a) is proportional to the weight of the mixture induced into the cylinder.
- • (b) is proportional to the volume of mixture induced into the cylinder.
- o (c) increases with increased humidity.

If choice b is selected set score to 1.

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

- o (a) water-mixed degreasers are less aggressive..
- o (b) solvent degreasers are much more effective.
- • (c) water-mixed degreaser residues may cause engine oil contamination in the overhauled engine.

If choice c is selected set score to 1.

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

The valves will open....

- o (a) early and close early.
- o (b) late and close early.
- • (c) early and close late.

If choice c is selected set score to 1.

146. How can back-firing be caused in a reciprocating engine?

- o (a) Damaged exhaust manifold.
- o (b) Rich mixture.
- • (c) Faulty valve clearance setting.

If choice c is selected set score to 1.

147. Where will you find evaporation ice on a float type carburetor?

- o (a) On the intake.
- • (b) Around the discharge nozzle.
- o (c) On the throttle valve.

If choice b is selected set score to 1.

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

- • (a) Critical altitude.
- o (b) Pressure altitude.
- o (c) Service ceiling.

If choice a is selected set score to 1.

149. What happens to a piston engine with fixed pitch propellor when icing occurs?

- • (a) Engine RPM drops
- o (b) Fuel pressure fluctuates
- o (c) Engine fails

If choice a is selected set score to 1.

150. Diesel engines have....

- o (a) a complex ignition system.
- • (b) no ignition system.
- o (c) a simple ignition system.

If choice b is selected set score to 1.

151. The ignition power at low RPM is very low. Therefore ignition timing must at engine start:

- o (a) adjusted according engine conditions.
- • (b) retarded.
- o (c) advanced.

If choice b is selected set score to 1.

152. On a light aircraft, what are the basic engine instruments?

- • (a) Tachometer - oil pressure - oil temperature
- o (b) Tachometer - oil quantity - oil temperature
- o (c) Tachometer - fuel flow meter - cylinder head temperature

If choice a is selected set score to 1.

153. The ratio of a fuel mixture is:

- • (a) The amount of air divided by the amount of fuel.
- o (b) The amount of fuel divided by the amount of air.
- o (c) The amount of humidity divided by the air density.

If choice a is selected set score to 1.

154. What type of propeller reduction gear would be used if there was enough room?

- o (a) Epicycle reduction gear
- o (b) Bevel reduction gear
- • (c) Spur-pinion gear

If choice c is selected set score to 1.

155. What will result if an oil filter element becomes completely blocked?

- • (a) Oil will flow at the normal rate unfiltered through the system.

- o (b) Oil will flow at a reduced rate through the system.
- o (c) Oil flow to the engine will stop.

If choice a is selected set score to 1.

156. What type of cooling is the best method with respect to costs?

- o (a) Liquid cooled.
- o (b) Gas cooled.
- • (c) Air cooled.

If choice c is selected set score to 1.

157. In idle position, the butterfly valve will be....

- o (a) fully closed.
- o (b) fully open.
- • (c) almost closed.

If choice c is selected set score to 1.

158. What is the correct cycle of a 4-stroke engine?

- o (a) Compression - induction - power - exhaust
- • (b) Induction - compression - power - exhaust
- o (c) Exhaust - power - compression - induction

If choice b is selected set score to 1.

159. The lowest temperature at which fuel vapor will catch fire when exposed to a flame is called....

- • (a) flash point.
- o (b) ignition point.
- o (c) explosive range.

If choice a is selected set score to 1.

160. In a 2 stroke engine the lubricating oil is mixed with fuel. What is the reason for this mixture?

- • (a) The crankcase is a part of the inlet manifold and can not contain any oil.
- o (b) It is necessary to burn the oil in the cylinder for extra heat.
- o (c) It is not necessary to lubricate the gear case in a 2-stroke engine.

If choice a is selected set score to 1.

161. In most aircraft reciprocating engines cooling is provided by means of using....

o (a) coolant fluid.

• (b) air.

o (c) a combination of coolant fluid and air.

If choice b is selected set score to 1.

162. In what engine instrument could you find fly weights?

• (a) Engine speed indicator.

o (b) Engine manifold pressure indicator.
o (c) Engine boost indicator.

If choice a is selected set score to 1.

163. A FADEC control system is:

• (a) A digital system.

o (b) A analog system.
o (c) A mechanical system.

If choice a is selected set score to 1.

164. What does the magneto safety check do?

o (a) Ensures that the magneto is working normally.

• (b) Ensures that the ignition system is working normally.

o (c) Ensures that all cylinders are firing.

If choice b is selected set score to 1.

165. Which shaft is powering the Accessory Gearbox?

o (a) Prop shaft

• (b) Crank shaft

o (c) Cam shaft

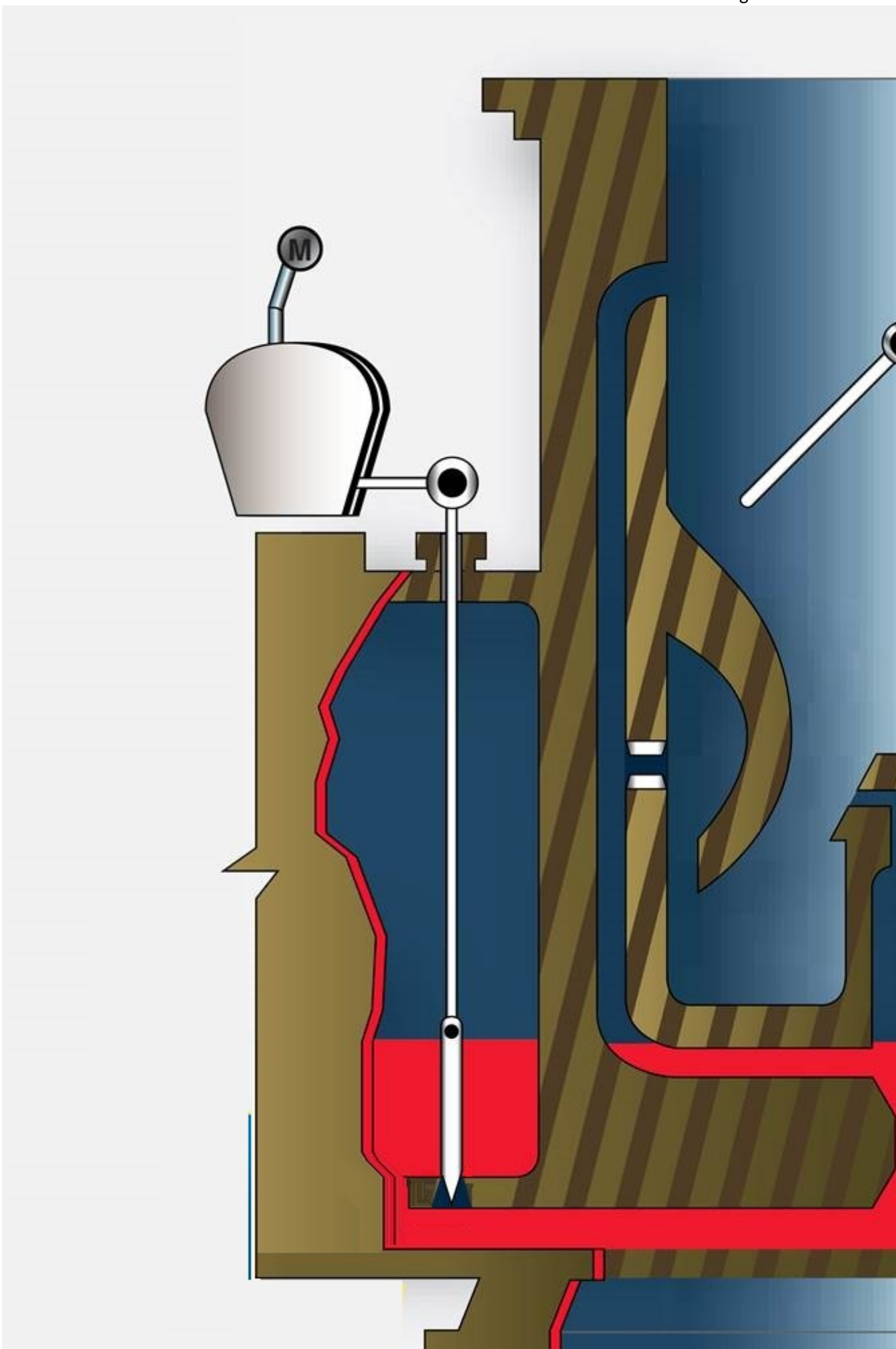
If choice b is selected set score to 1.

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

- (a) constant during the entire 360° of crankshaft travel.
- (b) at maximum velocity around TDC.
- (c) at maximum velocity 90° after TDC.

If choice c is selected set score to 1.

167. Which part of the picture is depicted with an arrow?


M

- (a) This is the fuel discharge nozzle.

o (b) This is the main air bleed.
o (c) This is the main metering jet.

If choice a is selected set score to 1.

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

o (a) a cracked exhaust stack.

- (b) exhaust valve blow-by.

o (c) worn piston rings.

If choice b is selected set score to 1.

169. What determines the weight of the fuel/air mixture?

- (a) Density of the air

o (b) Grade of the fuel
o (c) Temperature of the fuel

If choice a is selected set score to 1.

170. What makes a FADEC system fully redundant?

o (a) There are 2 FADEC's for each engine that can be switched from the cockpit.

- (b) The FADEC has 2 independent systems that will automatically switch over in case of a failure.

o (c) The engine can run continuously even if the FADEC totally fails.

If choice b is selected set score to 1.

171. Why does the smoothness of operation of an engine increase with a greater number of cylinders?

o (a) The power impulses are spaced farther apart.

- (b) The power impulses are spaced closer together.

o (c) The engine has larger counterbalance weights.

If choice b is selected set score to 1.

172. Some inline engines are inverted installed. What is the reason for this inverted installation?

The inverted installation provides the possibility....

- o (a) for better engine lubrication.
- • (b) to install a shorter landing gear.
- o (c) for better engine cooling.

If choice b is selected set score to 1.

173. How does a decrease in air density affect the power of an engine?

- • (a) The power decreases.
- o (b) There is no effect.
- o (c) The power increases.

If choice a is selected set score to 1.

174. State the biggest advantage of a FADEC system on piston engines?

- o (a) Cheaper
- • (b) No icing
- o (c) Lower fuel consumption

If choice b is selected set score to 1.

175. In a ground boosted engine the supercharged pressure must be at least above:

- o (a) 40 "HG.
- o (b) 50 "HG.
- • (c) 30 "HG.

If choice c is selected set score to 1.

176. The primary circuit of an ignition system is also called....

- o (a) high tension circuit.
- o (b) rotating circuit
- • (c) low tension circuit.

If choice c is selected set score to 1.

177. The power developed in the combustion chambers ignoring friction losses within the engine is known as....

- (a) indicated horsepower.

o (b) brake horsepower.
o (c) shaft horsepower.

If choice a is selected set score to 1.

178. How do cowl flaps aid in cooling a horizontally opposed aircraft engine?

- (a) Controls the amount of air flowing around the cylinders.

o (b) Recirculates air through the engine cylinders.
o (c) Directs air through the engine cylinders.

If choice a is selected set score to 1.

179. What is used to overcome the problem of varying fuel flow caused by changes in altitude and temperature?

o (a) Throttle valve.
o (b) Venturi.

- (c) Pressure balance-duct.

If choice c is selected set score to 1.

180. It may happen that ice forming occurs in aircraft engine carburettors. What is the effect on the manifold pressure in case ice builds up in a aircraft engine carburettor?

The manifold pressure of the aircraft engine....

- (a) decreases.

o (b) does not change.
o (c) increases.

If choice a is selected set score to 1.

181. To avoid damage to the aircraft and/ or engine and ensure safe hoisting, what procedure should you comply with?

- (a) Follow the manufacturers instructions.

o (b) Inspect the sling.
o (c) Ensure sufficient manpower is available.

If choice a is selected set score to 1.

182. What type of connecting rod is shown in the picture?

- o (a) Solid-type master rod.
- o (b) Split-type master rod

- (c) Fork- and blade rod.

If choice c is selected set score to 1.

183. The quadrant positions of the mixture control are:

- o (a) Full rich - lean - idle
- o (b) Full rich - idle cut off.
- • (c) Full rich - lean - idle cut off.

If choice c is selected set score to 1.

184. At the end of the downward motion after igniting the gasses the action of the piston is converted into a rotating motion. At the end of this motion the piston is forced back up in the cylinder.

By which force is the piston moved back up?

The cylinder is forced back up by the...

- o (a) gasses escaping through the opened exhaust valve.
- • (b) momentum of the crankshaft and propeller force.
- o (c) gasses entering the cylinder through the opened inlet valve.

If choice b is selected set score to 1.

185. As the aircraft climbs, the fuel/air mixture will....

- • (a) become richer.
- o (b) stay the same.
- o (c) become leaner.

If choice a is selected set score to 1.

186. During storage in a metal shipping container the humidity indicator of the engine should regularly be inspected. What is the interval to inspect the humidity indicator?

- • (a) Every 30 days.
- o (b) Every 180 days.
- o (c) Every 90 days.

If choice a is selected set score to 1.

187. On modern dynafocal engine mounts, the pads are mounted so that they are:

- • (a) reducing vibrations.
- o (b) support the engine to be static in balance.
- o (c) support the engine to be dynamic in balance.

If choice a is selected set score to 1.

188. During an engine start-up, a backfire is indicated. What does this indication mean?

o (a) This indication means that there is older fuel used.

• (b) This indication means that the mixture is to lean.

o (c) This indication means that the exhaust is not clear.

If choice b is selected set score to 1.

189. What is the first effect of icing in a carburetor on a variable pitch propellor?

o (a) Engine shuts down.

• (b) Drop in manifold pressure.

o (c) Drop in RPM.

If choice b is selected set score to 1.

190. Commercial operators use the Quick Engine Change Assembly. What does this QECA mean?

o (a) The QECA is essential the power plant without the necessary accessories installed on the engine.

• (b) The QECA is essential the power plant and necessary accessories installed on the engine.

o (c) The QECA are the necessary engine accessories required for installation on the engine.

If choice b is selected set score to 1.

191. How is an engine fitted to an aircraft?

o (a) Bolted to the firewall
o (b) Bolted to an aluminium tube framework.

• (c) Bolted to a steel tube framework.

If choice c is selected set score to 1.

192. If the exhaust valve of a four-stroke cycle engine is closed and the intake valve is just closed, the piston is on the

o (a) intake stroke.

• (b) compression stroke.

o (c) power stroke.

If choice b is selected set score to 1.

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

- (a) Engine overhaul.

o (b) Engine oil and filter change.
o (c) Replacement of oil lines.

If choice a is selected set score to 1.

194. In which type of engine indication instrument would you find a drag cup?

o (a) Oil pressure indicator.

- (b) Engine speed indicator.

o (c) Engine manifold pressure indicator.

If choice b is selected set score to 1.

195. What is used to clean the engine oil during normal operations?

o (a) An oil change.
o (b) A filter upstream of the pump.

- (c) A filter downstream of the pump.

If choice c is selected set score to 1.

196. Propulsive efficiency is the ratio of useful power to the power input, this is also known as the ratio of.....

o (a) indicated HP to brake HP.

- (b) thrust HP to brake HP.

o (c) indicated HP to friction HP.

If choice b is selected set score to 1.

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

- (a) Shortly before the piston reaches the top of the compression stroke.

o (b) When the piston has reached top dead centre of the intake stroke..
o (c) When the piston reaches top dead centre on the compression stroke.

If choice a is selected set score to 1.

198. One foot-pound of work is equivalent to:

- (a) Rolling a 1 pound ball over a distance of 1 foot.
- (b) Lifting one pound of weight a height of 1 foot.
- (c) Pushing one pound of weight over 1 foot distance.

If choice b is selected set score to 1.

199. Which statement pertaining to fuel/air ratios is true?

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

If choice c is selected set score to 1.

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

- (a) Full closed at all times.
- (b) Open for starting, closed for warmup
- (c) Full open at all times.

If choice b is selected set score to 1.

Why would jet fuel be used in diesel engines?

To operate the engine....

- (a) in very hot temperatures.
- (b) with a cheaper fuel.
- (c) in very low temperatures.

If choice c is selected set score to 1.

201. During the compression phase:

- (a) The piston moves upward, the intake and exhaust valves are closed.
- (b) The piston moves upward, the intake and exhaust valves are open.
- (c) The piston moves downward, the intake and exhaust valves are closed.

If choice a is selected set score to 1.

202. On some aircraft engine instruments is a yellow arc painted. What is the purpose of this yellow arc?

o (a) To indicate that this arc area is the correct operating area.

• (b) To indicate that this arc area is an area for temporary operation and an indication of caution.

o (c) To indicate that this arc area is an dangerous area .

If choice b is selected set score to 1.

203. What is the main different between a wet sump and a dry sump system.

• (a) A wet sump stores its oil in a sump, while a dry sump stores oil in an external tank.

o (b) A wet sump does not have a pump in the oil system.
o (c) A wet sump stores its oil in a tank, while a dry sump stores its oil in a sump.

If choice a is selected set score to 1.

204. Which engine type is not air-cooled?

o (a) Radial engine.

• (b) In-line engine.

o (c) Boxer engine.

If choice b is selected set score to 1.

205. What must first be done before doing a check during the engine ground run?

• (a) Engine must be warmed up.

o (b) Engine must be cold.
o (c) Engine must be at full throttle.

If choice a is selected set score to 1.

206. Which type of reciprocating engine fuel contains additives to prevent knocking?

o (a) Diesel.

• (b) Avgas.

o (c) Jet Fuel.

If choice b is selected set score to 1.

207. What drives a turbocharger?

o (a) Crankshaft.

• (b) Exhaust gases.

o (c) Electric motor.

If choice b is selected set score to 1.

208. What does FADEC stand for?

o (a) Fuel Air Dual Engine Command.
o (b) Fully Automatic Dual Electronic Control.

• (c) Full Authority Digital Engine Control.

If choice c is selected set score to 1.

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

o (a) Toward the latter part of the spark duration when the flame front reaches its maximum velocity
o (b) Just prior to spark plug firing.

• (c) Immediately after the breaker points close.

If choice c is selected set score to 1.

210. When large metallic particles are found in the oil filter during an inspection,

o (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.

o (c) it is an indication of normal engine wear, no action required, unless the deposits on the metallic chip detector exceeds a specified amount.

If choice b is selected set score to 1.

211. Which statement is correct regarding a four-stroke cycle aircraft engine?

The exhaust valve closes on the....

o (a) compression stroke.

• (b) inlet stroke.

o (c) outlet stroke.

If choice b is selected set score to 1.

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

- (a) Engine manufacturer's service or overhaul manual.

o (b) Engine structure repair manual.
o (c) AC 43.13 1A.

If choice a is selected set score to 1.

213. Which inputs are hardwired to engine control unit?

- (a) Aircraft systems not using a computer.

o (b) Systems using a digital data bus.
o (c) Aircraft systems using a computer.

If choice a is selected set score to 1.

214. To what altitude does an altitude boosted engine delivers max. performance?

o (a) Max boost altitude.
o (b) Max. performance altitude.

- (c) Critical altitude.

If choice c is selected set score to 1.

215. On which strokes are both valves of a four-stroke cycle reciprocating engine open?

- (a) Exhaust and intake.

o (b) Power and exhaust.
o (c) Intake and compression.

If choice a is selected set score to 1.

216. What would be the first check before removal of an reciprocating engine?

o (a) If the battery is diconnected.
o (b) Cylinder number 1 should be in TDC.

- (c) If the magneto's are in off position.

If choice c is selected set score to 1.

217. The use of octane in aviation fuel is to:

o (a) to increase the specific weight.

- (b) prevent detonation.

o (c) prevent a vapour lock.

If choice b is selected set score to 1.

218. LSA (Light Sports Aircraft) Aircraft engine oil tanks are equipped with oil quantity indication. What type of indicators is mostly used (on these small aircraft)?.

o (a) An oil tank side gauge.
o (b) A quantity indicator system with a float mechanism.

- (c) A dipstick.

If choice c is selected set score to 1.

219. The rotary engine can be used in as single or multi rotor engine. Where is this type of engine mostly used?

The rotary engine is mostly used....

- (a) in light aircraft.

o (b) as auxiliary power unit.
o (c) as ground power unit.

If choice a is selected set score to 1.

220. A Coffman starter is (was) commonly used in.

o (a) light opposed aircraft engines.

- (b) heavy inline aircraft engines.

o (c) diesel engines.

If choice b is selected set score to 1.

221. The camshaft of a horizontally opposed four stroke engine rotates at:

- (a) Half crankshaft speed.

o (b) Twice crankshaft speed.
o (c) Twice magneto speed.

If choice a is selected set score to 1.

222. In a FADEC system there is no....

- (a) fuel mixture control.

- o (b) fuel ignition system.
- o (c) fuel injection system.

If choice a is selected set score to 1.

223. Which of the illustrations in this figure shows the compression stroke?

- o (a)

- • (b)

- o (c)

If choice b is selected set score to 1.

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

- • (a) Straight mineral oil

- o (b) Semi synthetic oil.
- o (c) Ash less dispersant oil.

If choice a is selected set score to 1.

225. What type of engine is also called a boxer engine?

- (a) Horizontal opposed.

o (b) In line engine.
o (c) Radial engine.

If choice a is selected set score to 1.

226. What is the purpose of a supercharger?

o (a) To increase the speed of the airflow to the manifold.
o (b) To decrease the airflow to the manifold.

- (c) To increase the manifold pressure.

If choice c is selected set score to 1.

227. Why do exhaust systems need regular inspections?

o (a) Pipes coming loose from the engine caused by vibration.
o (b) Blackage of the exhaust pipes.

- (c) Corrosion.

If choice c is selected set score to 1.

228. A rich air/fuel mixture will:

o (a) Not burn due to the lack of oxygen.

- (b) Burn faster than a normal mixture.

o (c) Burn slower than a normal mixture.

If choice b is selected set score to 1.

229. Valve overlap is incorporated in the valve timing of a piston engine to:

o (a) Prevent a weak cut when the engine is accelerated rapidly.

- (b) Improve volumetric efficiency.

o (c) Increase the engines compression ratio.

If choice b is selected set score to 1.

230. Which of the three quantities has an effect on air humidity?

o (a) Altitude

- (b) Temperature

o (c) Dew point

If choice b is selected set score to 1.

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

o (a) Halfway between top and bottom dead centre.

- (b) Top dead centre.

o (c) Bottom dead centre.

If choice b is selected set score to 1.

232. Carburetor heating on a float type carburetor should....

o (a) not be used during warm-up.
o (b) only be used with lean fuel mixtures.

- (c) be used during warm-up.

If choice c is selected set score to 1.

233. What defines the cylinder size?

- (a) Bore and stroke

o (b) Distance between TDC and BDC and stroke
o (c) Bore and diameter

If choice a is selected set score to 1.

234. What principle causes the ignition of the fuel air mixture in a diesel engine?

The ignition in the diesel engine is caused by....

o (a) a high tension ignition system.

- (b) the high compression ratio.

o (c) aditives in the diesel fuel.

If choice b is selected set score to 1.

235. Why should used-engines in storage be protected against internal corrosion?

o (a) Used engines are not prone to corrosion, the oil system protects the engine against internal corrosion. No additional protection is required

- (b) The normal combustion creates corrosive by-products and can corrode the internal engine during storage

o (c) If the engine is proper stored (no humidity can enter the internal engine) there is no need for engine preservation.

If choice b is selected set score to 1.

236. What type of lines and hoses are typically found in a wing nacelle of the engine?

- (a) Fuel, oil and hydraulic lines.

o (b) Fuel lines.
o (c) Fuel, hydraulic and pneumatic lines.

If choice a is selected set score to 1.

237. An ignition lead is designed to carry:

- (a) Over 12000 Volt

o (b) 12V
o (c) Over 12000 AMPS

If choice a is selected set score to 1.

238. The ECU is assigned to the cylinders. This assignment is to....

o (a) one cylinder.
o (b) all cylinders of that engine.

- (c) a pair of cylinders

If choice c is selected set score to 1.

239. What causes a high carburettor and cylinder temperature during an engine ground run?

o (a) Engine power high.

- (b) Engine power low.

o (c) Engine shut down.

If choice b is selected set score to 1.

240. The function of the density controller is:

o (a) to limit the waste gate pressure.

- (b) to limit the manifold pressure below the turbo-chargers critical altitude.

- (c) to limit the manifold pressure temperature below the turbo-chargers maximum temperature.

If choice b is selected set score to 1.

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

- (a) 1:7.
- (b) 7:1.
- (c) 7:10.

If choice b is selected set score to 1.

242. The cylinder head temperature sensor is usually installed on:

- (a) All cylinders.
- (b) Coldest cylinder.
- (c) Hottest cylinder.

If choice c is selected set score to 1.

243. Detonation occurs when the fuel/air mixture....

- (a) is too rich.
- (b) burns too fast.
- (c) ignites before the time of normal ignition.

If choice c is selected set score to 1.

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

- (a) a fouled plug.
- (b) normal operation.
- (c) detonation.

If choice b is selected set score to 1.

245. How can volumetric efficiency be increased?

- (a) Keep the fuel cool and air cool.
- (b) Keep the fuel warm.
- (c) Heat up the air intake.

If choice a is selected set score to 1.

246. Weakening the mixture below the best fuel/air ratio will cause the engine power to:

- o (a) Increase initially, but decrease below take off power.
- • (b) Decrease.
- o (c) Increase.

If choice b is selected set score to 1.

247. The operation of a FADEC is:

- o (a) a inter changeable system.
- • (b) a redundant system operation.
- o (c) a single system operation.

If choice b is selected set score to 1.

248. The ratio of the piston displacement and combustion chamber space is known as....

- • (a) compression ratio.
- o (b) mechanical efficiency.
- o (c) volumetric efficiency.

If choice a is selected set score to 1.

249. How is ice build-up prevented on float type carburetor?

- • (a) Hot air from around the engine
- o (b) Hot exhaust gasses fed into the intake
- o (c) Electrical heating of the intake

If choice a is selected set score to 1.

250. Starting a FADEC engine is:

- o (a) the same as a carburetor engine
- o (b) harder than a carburetor engine
- • (c) easier than a carburetor engine

If choice c is selected set score to 1.

251. What type of engine is the 'OTTO' engine?

- o (a) Radial engine
- o (b) 2-stroke engine
- • (c) 4-stroke engine

If choice c is selected set score to 1.

252. Proper engine warm up is important particularly when the condition is unknown. Therefore throttle up to a higher stable RPM is allowed as soon....

- • (a) the oil indicates temperature rise.
- o (b) the engine start running.
- o (c) there is oil pressure.

If choice a is selected set score to 1.

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

- • (a) Its rate of flow through an orifice at a standard temperature.
- o (b) Its rate of change in viscosity with temperature change.
- o (c) Its resistance to flow at a standard temperature as compared to high grade paraffin base oil at the same temperature.

If choice a is selected set score to 1.

254. What does a supercharger do?

- • (a) Increases the pressure in the induction manifold.
- o (b) Decreases the pressure in the induction manifold.
- o (c) Increases the pressure of the exhaust gases.

If choice a is selected set score to 1.

255. What is the danger when using MOGAS blended with bio-alcohol?

- o (a) The fuel becomes very volatile.
- o (b) The engine will overheat easily.
- • (c) Water will be absorbed by the alcohol and freeze when flying at high altitude.

If choice c is selected set score to 1.

256. Which component is not part of a fuel injection throttle body?

- o (a) Venture.

- (b) Float operated needle valve.

o (c) Throttle valve.

If choice b is selected set score to 1.

257. Oil is transferred within the crankcase by....

o (a) internal oil lines.

- (b) iInternal oil channels.

o (c) external oil lines.

If choice b is selected set score to 1.

258. The firing order is:

o (a) The same for all engines.
o (b) Not important.

- (c) Different to the cylinder numbering.

If choice c is selected set score to 1.

259. During storage in shipping containers humidity indicators are used. What is the color of the humidity indicator if the conditions are unsafe?

o (a) The color of the humidity indicator if the conditiond are unsafe is blue.

- (b) The color of the humidity indicator if the conditiond are unsafe is pink.

o (c) The color of the humidity indicator if the conditiond are unsafe is white.

If choice b is selected set score to 1.

260. Grinding the valves of a reciprocating engine too thin is likely to result in....

o (a) excessive valve clearance.
o (b) normal operation and long life.

- (c) pre-ignition and burned valves.

If choice c is selected set score to 1.

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

o (a) permit a rich fuel/air mixture into the cylinders.

- (b) obtain the best volumetric efficiency and lower cylinder operating temperatures.

- o (c) make sure exhaust gasses mix better with the fresh fuel/air mixture.

If choice b is selected set score to 1.

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

- o (a) flex the rings slightly during operation and reduce the possibility of the rings sticking in the grooves.
- o (b) increase the compression pressure for starting purposes.
- • (c) provide a straight cylinder bore at operating temperatures.

If choice c is selected set score to 1.

263. Under some weather conditions ice build-up in carburettors can occur. At which throttle position will ice build-up occur first?

Ice build-up occurs first with the throttle valve....

- o (a) halve throttle.
- • (b) partially closed.
- o (c) almost open.

If choice b is selected set score to 1.

264. The engine ground check is done:

- • (a) After engine warm-up
- o (b) Before engine warm-up
- o (c) Before engine start

If choice a is selected set score to 1.

265. Very small amounts of nonferrous metal (in engine oil) found after major engine maintenance,

- o (a) is not normal.
- o (b) indicates faulty engine maintenance.
- • (c) is normal.

If choice c is selected set score to 1.

266. Actual power wil be ..... than the power produced by the engine.

- • (a) Less
- o (b) Equal

- (c) More

If choice a is selected set score to 1.

267. What is the disadvantage of splash oil distribution?

- (a) Does not clean the engine.

- (b) Does not work well at all attitudes.

- (c) Does not work with dry-sump system.

If choice b is selected set score to 1.

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

- (a) Oil starvation of bearings and other parts.

- (b) Accelerated oil breakdown and oxidation.
- (c) Excessive thinning of the engine oil.

If choice a is selected set score to 1.

269. How is the air supply to a radial engine cooling system controlled?

- (a) Via adjustable cowling flaps.

- (b) Via an adjustable air supply valve.
- (c) Via an adjustable air intake duct.

If choice a is selected set score to 1.

270. A method of improving Volumetric Efficiency is:

- (a) The use of carburettor heat.
- (b) Weakening the mixture.

- (c) Valve overlap,

If choice c is selected set score to 1.

271. Why are reduction gears fitted to a piston engine?

- (a) Reduce the engine RPM.

- (b) Reduce the propellor RPM.

- (c) Change the direction of rotation.

If choice b is selected set score to 1.

272. Excessive valve clearances will cause the duration of valve opening to

- (a) decrease for both intake and exhaust valves.

o (b) decrease for intake valves and increase for exhaust valves.
o (c) increase for both intake and exhaust valves.

If choice a is selected set score to 1.

273. On a turbo charged engine, the fuel pressure will:

- (a) Remain constant at all altitudes.

o (b) Decrease with increasing altitude.
o (c) Increase with increasing altitude.

If choice a is selected set score to 1.

274. What is the correct action if the oil pressure does not rise within 1 minute?

o (a) Engine RPM should be increased to increase the pump speed.

- (b) Engine must be shut down.

o (c) Engine mixture should be increased.

If choice b is selected set score to 1.

275. The cleaning of different type of air filters is important. So....

- (a) each type of air filter has his own cleaning procedure.

o (b) each user has his own cleaning procedures.
o (c) all filters have the same procedure to overcome faulty procedures.

If choice a is selected set score to 1.

276. Brake Horsepower is:

o (a) Theoretical power in the cylinder.
o (b) Power measured with a brake.

- (c) Useful power at the propeller.

If choice c is selected set score to 1.

277. 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.

- o (b) Manifold pressure lower at idle RPM than at static RPM.
- o (c) Lower than normal manifold pressure for any given RPM.

If choice a is selected set score to 1.

278. What connects the ignition coil with the spark plug?

- • (a) High tension lead.
- o (b) Low tension lead.
- o (c) Ignition coil is in direct contact with the spark plug.

If choice a is selected set score to 1.

279. Turbo compound turbines used on some reciprocating engines are driven by the

- o (a) compression of the exhaust gases.
- • (b) exhaust gas energy.
- o (c) crankshaft.

If choice b is selected set score to 1.

280. What is compression ratio?

- o (a) The mass of the fuel/air mixture in a cylinder with the piston at TDC decided by the mass of fuel/air mixture with the piston at BDC.
- o (b) The amount of fuel that goes into a cylinder decided by the amount of air that goes in.
- • (c) The measurement of how much the air/fuel mixture is compressed in the engine cilinder.

If choice c is selected set score to 1.

Which factors will decrease volumetric efficiency in a reciprocating engine?

1. Low cylinder head temperatures;
2. Improper valve timing;
3. Complete scavenging;
4. High carburettor air temperatures;
5. Sharp bends in the induction system.

281.

- o (a) 3, 4, and 5.
- o (b) 1, 3 and 4.
- • (c) 2, 4, and 5.

If choice c is selected set score to 1.

282. Why are piston rings used?

- (a) To secure the piston seals in position.
- (b) To prevent gas losses between the piston and the cylinder.
- (c) To ensure a good lubrication of the piston.

If choice b is selected set score to 1.

If assessment score is 0% to 100% Feedback