

Question block created by wizard

1. Newtons first law applies to a mass. Which mass in a gas turbine engine does it apply to?

- (a) Mass of the fuel.
- (b) Mass of the engine.
- (c) Mass of the air.

If choice c is selected set score to 1.

2. What type of energy is a result of motion?

- (a) Potential energy.
- (b) Dynamic energy.
- (c) Kinetic energy.

If choice c is selected set score to 1.

3. What causes a mass to accelerate?

- (a) Power
- (b) Energy
- (c) Force

If choice c is selected set score to 1.

4. What are the main advantages of a turbofan compared to a turbojet?

- (a) Lightweight engine with good power output.
- (b) Low noise levels and good engine acceleration.
- (c) Good power output with low fuel consumption.

If choice c is selected set score to 1.

5. What is the correct working cycle of a gas turbine engine?

- (a) Induction - combustion - compression - exhaust
- (b) Exhaust - combustion - compression - induction
- (c) Induction - compression - combustion - exhaust

If choice c is selected set score to 1.

6. How is a gas turbine engine started?

- (a) By adding and igniting fuel, then spinning the compressor to establish a rearward flow of air.

- o (b) By adding and igniting fuel, the engine is self-starting.
- (c) By spinning the compressor to establish a rearward flow of air, then adding and igniting fuel.

If choice c is selected set score to 1.

7. To what other type of engine can the working cycle of a gas turbine engine be compared?

- o (a) Steam driven piston engine.
- o (b) Two - stroke piston engine.
- (c) Four - stroke piston engine.

If choice c is selected set score to 1.

8. Which of the following statements is true about the mass airflow in a turbojet engine?

- o (a) The mass airflow is larger at the exhaust than at the intake
- (b) The mass airflow is the same from intake to exhaust
- o (c) The mass airflow is larger at the intake than at the exhaust

If choice b is selected set score to 1.

9. What is the purpose of the fuel flow transmitter?

The purpose of the fuel flow transmitter is...

- (a) to sent a data signal of fuel flow to the indication system.
- o (b) to control fuel / air mixture in the combustion chamber.
- o (c) to limit fuel flow to the combustion.

If choice a is selected set score to 1.

10. The thrust level request on a FADEC engine is made through a:

- o (a) cable system
- (b) resolver
- o (c) push / pull control rods

If choice b is selected set score to 1.

- 11.** The fuel control is an engine driven accessory. It can operate by mechanical, hydraulic, electrical, or pneumatic forces in various combinations.

What is the purpose of the fuel control?

- (a) Control the fuel flow from the aircraft fuel booster pumps.
- (b) Maintain a correct combustion air-to fuel mixture.
- (c) Limit the amount of fuel to the combustion chamber.

If choice b is selected set score to 1.

- 12.** The fuel flow transmitter (FFT) uses electromagnetic pulses...

- (a) to control the amount of fuel sent to the fuel control unit.
- (b) generated by the fuel booster pumps.
- (c) to measure the rate of fuel flow.

If choice c is selected set score to 1.

- 13.** When the pilot moves the fuel control power lever forward, fuel flow is increased. This increase in fuel flow creates increased gas expansion in the combustor chamber.

What is the effect of this gas expansion?

- (a) It lowers the level of temperature in the combustion chamber of the engine. This increases the thrust.
- (b) It raises the level of power in the engine.
- (c) It raises the level of air flow being merited to the engine by the fuel control unit.

If choice b is selected set score to 1.

- 14.** The full authority digital electronic control (FADEC) system is a computer-based engine control system. Each aircraft engine has its own control system.

What is the main component of the FADEC system?

- (a) The engine driven fuel pumps.
- (b) The fuel control unit.
- (c) The electronic engine control (EEC).

If choice c is selected set score to 1.

- 15.** What is the purpose of the L.P. pump?

- (a) To ensure the engine will continue to run if the H.P. fuel pump fails.

- (b) To ensure rapid acceleration when the throttle is opened.
- (c) To prevent cavitation of the H.P. fuel pump.

If choice c is selected set score to 1.

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

- (a) Adjust ignition timing.
- (b) Adjust the induction air temperature.
- (c) Adjust engine oil pressure.

If choice a is selected set score to 1.

17. The ECU (on a reciprocating engine) is assigned to cylinder(s). This assignment is to:

- (a) to all cylinders of that engine.
- (b) one cylinder.
- (c) to a pair of cylinders

If choice c is selected set score to 1.

18. One of the functions of the FADEC (on a reciprocating engine) is:

- (a) Control ignition timing for engine start.
- (b) Adjust manifold pressure for engine start.
- (c) Control the pre-oiling before engine start.

If choice a is selected set score to 1.

19. The EGT Harness connects to a terminal block.

From the terminal block, the EGT signal is sent to a...

- (a) voltage generator, to increase the temperature.
- (b) resistor to decrease the actual temperature otherwise it can be too high.
- (c) display.

If choice c is selected set score to 1.

20. Each jet axial flow engine has thermocouple probes evenly spaced around the...

- (a) combustion outlet assembly. Each probe has 17 alumel-chromel thermocouple junctions.
- (b) high pressure compressor assembly. Each probe has two alumel-chromel thermocouple junctions.

- (c) turbine assembly. Each probe has two alumel-chromel thermocouple junctions.

If choice c is selected set score to 1.

21. The EGT indication is important because it gives...

- o (a) the only engine condition monitoring parameter.
- (b) information of the heaviest loaded part, the turbine.
- o (c) a direct relationship to engine power.

If choice b is selected set score to 1.

22. Which indication component is using a permanent magnet with three coil assemblies?

- (a) The engine tachometer system.
- o (b) The airborne vibration system signal conditioner pick up points.
- o (c) The fuel pump pressure indication system.

If choice a is selected set score to 1.

23. The engine pressure ratio (EPR) indicating system measures the pressure ratio across the...

- (a) fan or core engine.
- o (b) only pressure outlet (exhaust).
- o (c) compressor including low pressure.

If choice a is selected set score to 1.

24. Advancing the power levers causes...

- o (a) engine thrust and EPR indicator to stabilize then decrease.
- o (b) actual engine thrust to decrease and EPR indicator to rise.
- (c) engine thrust and EPR indicator to rise.

If choice c is selected set score to 1.

25. The oil pressure transmitter senses the difference between pressure pump delivery pressure and...

- (a) scavenge pump inlet pressure or gear box pressure.
- o (b) the ISA parameters.
- o (c) the oil reservoir.

If choice a is selected set score to 1.

26. The Oil Pressure Indicator installed in a piston powered aircraft fails to register pressure when the engine is operating.

What should you do?

- (a) More throttle for more RPM.
- (b) Shut down the engine.
- (c) Continue for at least 5 minutes, do not shutdown the engine.

If choice b is selected set score to 1.

27. The engine tachometer N2 system senses the speed engine rotor shafts.

It is read in the unit...

- (a) percent.
- (b) engine pounds of thrust.
- (c) rpm (revolutions per minute).

If choice a is selected set score to 1.

28. A manifold pressure gauge is designed to

- (a) indicate differential pressure between the intake manifold and atmospheric pressure.
- (b) maintain constant pressure in the intake manifold.
- (c) indicate absolute pressure in the intake manifold.

If choice c is selected set score to 1.

29. Engine torque is used to indicate...

- (a) the power that is developed by a turbo-propeller engine.
- (b) the power that is developed by a turbo fan engine.
- (c) lateral twist on the engine mouths.

If choice a is selected set score to 1.

30. The torque meter measures...

- (a) simply the pressure load to the drive shaft.
- (b) the required pressure to resist the axial thrust of the helical gear.
- (c) torque effect of the propeller system through the use of a speed sensor.

If choice b is selected set score to 1.

31. If the starter were cut off below the self-accelerating speed, the engine could?

- (a) Catch fire externally.
- (b) This is not a problem because the starter would re-engage to continue the starting process.
- (c) Fail to accelerate to idle speed.

If choice c is selected set score to 1.

32. A common method of coupling the electrical starter drive to the engine is by means of a...

- (a) jaw on the starter.
- (b) ratchet on the drive gearbox.
- (c) direct shaft to high speed shaft.

If choice a is selected set score to 1.

33. The exact sequence of the starting procedure is important since there must be...

- (a) sufficient air flow through the engine to support combustion.
- (b) indication before you can get fuel flow to the engine.
- (c) oil pressure before rotation of the engine high speed compressor.

If choice a is selected set score to 1.

34. The starter motor is capable of cranking the engine to a speed slightly higher than?

- (a) idle speed.
- (b) that at which sufficient gas flow is generated to enable the engine to accelerate under its own power.
- (c) that at which sufficient air flow provided to have combustion.

If choice b is selected set score to 1.

35. What are the two main methods used on starting aircraft engines?

- (a) Battery powered electrical starter and vacuum starter.
- (b) Electric starters and air starters.
- (c) Manual crank starters and hydraulic motor driving a clutch system.

If choice b is selected set score to 1.

36. The engine starting system supplies the force to turn the engine N2 compressor on the ground by...

- (a) rotating the gearbox that is connected to the low speed shaft.
- (b) supplying air to the fan.
- (c) rotating the gearbox that is connected to the high speed shaft.

If choice c is selected set score to 1.

37. A Coffman starter is commonly used in.

- (a) light opposed reciprocating aircraft engines.
- (b) single row radial reciprocating engines.
- (c) heave inline reciprocating aircraft engines.

If choice c is selected set score to 1.

38. When using an electric starter motor (on a reciprocating engine), 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).

If choice a is selected set score to 1.

39. Which of the following types of electric motors are commonly used in electric engine starter (reciprocating engines)?

- (a) Synchronous motors.
- (b) Direct cranking electric starter, shunt wound motors.
- (c) Direct cranking electric starter, series wound motors.

If choice c is selected set score to 1.

40. The ignition power supply includes two independent ignition exciters installed on the engine.

Each ignition exciter is...

- (a) of the capacitive-discharge type, converting 115-volt ac to 24-kilovolts dc (nominal).
- (b) converting 115-volt ac to 24-kilovolts ac (nominal).
- (c) an independent battery device, storing its own power.

If choice a is selected set score to 1.

41. The high tension distribution system conducts the high voltage dc from the ignition excitors to the...

- (a) condenser.
- (b) igniter plugs.
- (c) compressor case

If choice b is selected set score to 1.

42. The ignition system supplies electrical energy at high voltage to...

- (a) rotate the gearbox which causes engine start.
- (b) the turbine section for quick engine starting.
- (c) start or sustain combustion of the fuel-air mixture in the engine.

If choice c is selected set score to 1.

43. When will continuous ignition be selected?

- (a) Only for start-up.
- (b) After take-off.
- (c) For flight in bad weather conditions.

If choice c is selected set score to 1.

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

- (a) Carbon fouling of the electrode and insulator.
- (b) Lead fouling of the electrode and insulator.
- (c) Insulator tip cracked.

If choice c is selected set score to 1.

45. "Ignition system voltage is dangerously high. Ignition switch must be in off position before removal of any ignition component."

Why?

- (a)
To ensure complete dissipation of energy from the system.
- (b) This permits cooling of the high tension lead.
- (c) In the off position the cooling will continue. This will prevent hot components.

If choice a is selected set score to 1.

46. "Ignition system voltage is dangerously high. Ignition switch must be in off position before removal of any ignition component." This is a warning.

Why?

- (a) Could cause early rotation of the starter.
- (b) The ignition box has to warm up because it extremely cold.
- (c) Because it could result in severe injury to personnel

If choice c is selected set score to 1.

47. Why is it required to ground the cable terminal of an ignition system after detaching the cable from the igniter plug?

- (a) To prevent an open in the ignition cable
- (b) To prevent a short in the ignition cable.
- (c) To dissipate the energy stored in the ignition system

If choice c is selected set score to 1.

If assessment score is 0% to 100% Feedback