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This exam contains 24 questions.

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

a. Dynamic energy.
b. Potential energy.
c. Kinetic energy.

2. Who patented the Gas Turbine Engine?

a. Frank Whittle.
b. Frank Welling.
c. Frank Sikorsky.

3. When a body is acted upon by an external force, the rate of change of momentum is proportional to the force and takes places in the direction of the force.

This is Newton's.....

a. first law.
b. second law.
c. third law.

4. What do they also use for propulsion of modern aircraft?

a. Turbojets and pulsjets.
b. Ramjets.
c. None of these.

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

6. 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).

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

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

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

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

9. Torque measurement is only applied on....

a. turbojets.
b. high bypass engines.
c. turboprops and turboshafts.

10. Vibration levels of a gasturbine engine are measured in....

a. vibes.
b. inches.
c. mills.

11. The EGT thermocouples are always wired....

a. in series.
b. parallel.
c. in a bridge circuit.

12. Oil pressure is measured in PSI. This means....

a. pressure per static inches.

b. pounds per square inch.
c. pressure per standard inch.

13. Vibrating pressure transmitters are used....

a. for oil pressure measurement.
b. for fuel pressure measurement.
c. for EPR measurement.

14. The fuel pump is a dual stage pump. What type of pump is the booster pump?

a. Centrifugal type.
b. Gear type.
c. Venturi type.

15. The main fuel pump is mounted on....

a. the fan gearbox.
b. the HP compressor gearbox.
c. the fancasing.

16. Manifold pressure on a reciprocating engine is....

a. a differential pressure reading.
b. an absolute pressure reading.
c. a relative pressure reading.

17. The torque meter measures...

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

18. 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.

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

a. Manual crank starters and hydraulic motor driving a clutch system.

b. Battery powered electrical starter and vacuum starter.
c. Electric starters and air starters.

20. When using an electric starter motor (on a reciprocating engine), current flow....

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).

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

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

22. Modern gasturbines have....

a. capacitive type ignition exciters that output high voltage DC.
b. capacitive type ignition exciters that output high voltage AC.
c. capacitive type ignition exciters that output 24 - 25 V DC.

23. Ignition exciters on modern gasturbines....

a. are cooled by HP bleed air.
b. are cooled by LP bleed air or fan air.
c. are cooled by fuel.

24. "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. Because it could result in severe injury to personnel
c. The ignition box has to warm up because it extremely cold.