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. Use the following URL to download a complete list of associated supplement books:  [http://www.faa.gov/pilots/testing/supplements/](http://www.faa.gov/pilots/testing/supplements/)

The Learning Statement Reference Guide for Airman Knowledge Testing contains listings of learning statements with their associated codes. It can be located at:  [http://www.faa.gov/training_testing/testing/media/LearningStatementReferenceGuide.pdf](http://www.faa.gov/training_testing/testing/media/LearningStatementReferenceGuide.pdf)

1. **PLT305**  
   FEX  
   A purpose of leading edge slats on high performance wings is to  
   A) increase lift at relative slow speeds.  
   B) improve aileron control during low angles of attack.  
   C) direct air from the low-pressure area under the leading edge along the top of the wing.

2. **PLT305**  
   FEX  
   Which of the following is considered an auxiliary flight control?  
   A) Ruddervator.  
   B) Upper rudder.  
   C) Leading-edge flaps.

3. **PLT523**  
   FEX  
   The purpose of vortex generators mounted on the horizontal stabilizer is to  
   A) decrease drag at high airspeeds.  
   B) increase elevator effectiveness at high speeds.  
   C) prevent flow separation over the elevator at very slow speeds.

4. **PLT315**  
   FEX  
   The speed at which the airflow over the wing first reaches the speed of sound is known as the  
   A) Reynolds number.  
   B) transonic index.  
   C) critical Mach number.

5. **PLT244**  
   FEX  
   When will power applications cause the greatest change in airplane trim and stability?  
   A) When on a power approach at low airspeeds.  
   B) Operation at high gross weight and low airspeed.  
   C) When power is applied simultaneously with a configuration change.
6. PLT214 FEX
Shock-induced separation of airflow occurring symmetrically near the wing root of a sweptback wing may result in
A) severe porpoising due to an attempt to recover control while under reverse command.
B) a high-speed stall and sudden pitchup due to the center of pressure moving forward on the wing.
C) a severe diving moment, due to the center of pressure moving aft on the wing and a decrease of downwash on the horizontal tail.

7. PLT214 FEX
The purpose of sweeping wings back approximately 30° to 35° is to
A) minimize dutch roll.
B) reduce high-speed drag.
C) provide aileron control when the root of the wing approaches the critical angle of attack.

8. PLT245 FEX
The true airspeed at which an airplane stalls varies with
A) load factor and angle of attack.
B) load factor, weight, and density altitude.
C) density altitude, weight, and angle of attack.

9. PLT237 FEX
What effect will decreasing air density have on lift and drag?
A) Lift and drag will decrease.
B) Lift will increase and drag will decrease.
C) Lift will decrease and drag will increase.

10. PLT248 FEX
What will cause an airplane to skid in flight when entering a turn?
A) Too much speed without enough bank.
B) Too much bank without enough rudder.
C) Too much rudder without enough bank.

11. PLT242 FEX
An airplane is in equilibrium when
A) there are no accelerations and the airplane continues in steady flight.
B) the airplane is disturbed from its flightpath and it will return without control use.
C) the airplane has neither the tendency to continue or return from disturbance displacement.

12. PLT095 FEX
During flight with zero angle of attack, the pressure along the upper surface of the wing will be
A) equal to atmospheric pressure.
B) less than atmospheric pressure.
C) greater than the pressure below the wing.
13. PLT244
The purpose of airplane wing dihedral angle is to
A) increase lateral stability.
B) increase longitudinal stability.
C) increase lift coefficient of the wing.

14. PLT244
What is the primary source of directional stability for an airplane?
A) CG position.
B) Vertical tail.
C) Horizontal tail.

15. PLT502
What is the significance of a flashing red ATCT light gun signal?
A) Vehicles or personnel should clear the taxiway.
B) Aircraft in flight should exercise extreme caution.
C) Aircraft on the ground should return to their starting point on the airport.

16. PLT124
What must happen to true airspeed to maintain the same angle of attack in level flight, when the air
density changes?
A) The airspeed must increase when the air density decreases.
B) The airspeed must increase when the air density increases.
C) The airspeed must decrease when the air density decreases.

17. PLT124
An airplane is climbing at Mach .78. The true airspeed will
A) increase with altitude.
B) increase as pressure decreases.
C) decrease as the temperature decreases.

18. PLT124
Which is an advantage of flying a jet at high altitudes?
A) Lower temperatures increase engine efficiency.
B) Thrust increases as the density of the air decreases.
C) Lower engine RPM's will result in decreased specific fuel consumption.

19. PLT328
An airplane is flying at a constant altitude with a power setting which produces the maximum air miles
per pound of fuel. To maintain the maximum air miles per pound of fuel as the weight of the fuel
decreases the engine power setting should be
A) decreased.
B) increased.
20. Which factor is most significant when determining the optimum cruise altitude available?
A) Winds aloft and temperature forecast.
B) Fuel requirement to climb to altitude.
C) Gross weight of the airplane at the beginning of the cruise.

21. Takeoff speed limits V1, VR, and V2, contained in performance charts and tables of the airplane flight manual are
A) true airspeeds.
B) indicated airspeeds.
C) corrected airspeeds.

22. (Refer to figure 2.) Compute the V speeds for the following conditions.
Gross weight 250,000 lb
Pressure altitude 428 ft
OAT +80 °F
Flaps 25°
Tailwind 5 kts
Airport SEA RWY 34
A) V1 118, VR 132, V2 145.
B) V1 117, VR 133, V2 144.
C) V1 121, VR 133, V2 144.

23. To which elevation should the cabin altitude be set for the following landing conditions?
Altimeter 30.12
Field elev 6172 ft
Airplane cabin depressurized 500 ft AGL
Cabin pressure controller calibrated to 29.92
A) 6,472 feet.
B) 6,672 feet.
C) 6,792 feet.

24. Which is a characteristic of the constant Mach cruise control procedure?
A) EPR is increased as aircraft weight decreases.
B) Thrust is reduced as aircraft weight decreases.
C) True airspeed decreases as the outside air temperature (OAT) increases.
(Refer to figure 13.) Determine the go-around EPR's for these conditions.

<table>
<thead>
<tr>
<th>Condition</th>
<th>EPR Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure altitude</td>
<td>1,000 ft</td>
</tr>
<tr>
<td>TAT</td>
<td>0 °C</td>
</tr>
<tr>
<td>A/C bleeds</td>
<td>No. 2 and 3 ON</td>
</tr>
<tr>
<td></td>
<td>No. 1 OFF</td>
</tr>
<tr>
<td>Anti-ice</td>
<td>Eng. ON</td>
</tr>
<tr>
<td>A) Eng. 1, 2.12; Eng. 2, 2.15; Eng. 3, 2.12.</td>
<td></td>
</tr>
<tr>
<td>B) Eng. 1, 2.16; Eng. 2, 2.11; Eng. 3, 2.16.</td>
<td></td>
</tr>
<tr>
<td>C) Eng. 1, 2.16; Eng. 2, 2.08; Eng. 3, 2.12.</td>
<td></td>
</tr>
</tbody>
</table>

26. PLT130 FEX

The ratio of NM per hour to fuel flow in pounds per hour identifies which item relating to airplane performance?
A) Specific range.
B) Specific fuel flow.
C) Specific fuel consumption.

27. PLT078 FEX

All 14 CFR 139 airports must report
A) accident and incident data annually.
B) noise complaint statistics for each departure procedure or runway.
C) declared distances for each runway.

28. PLT011 FEX

(Refer to figure 6.) The maximum temperature limitation for takeoff is ISA +34 °C. Which is the highest temperature that will allow a takeoff from a 7,000-foot pressure altitude airport?
A) +87 °F.
B) +91 °F.
C) +95 °F.

29. PLT038 FEX

(Refer to figures 18 and 19.) What is the minimum torque required for takeoff under operating conditions No. 1?
A) 12,400 inch-pounds.
B) 16,600 inch-pounds.
C) 18,000 inch-pounds.

30. PLT012 FEX

(Refer to figure 27.) What is the total fuel burn for a 1,500 NM cruising flight under operating conditions No. 4?
A) 18,860 pounds.
B) 19,210 pounds.
C) 22,280 pounds.

31. PLT016 FEX
The captain says to load on 10,000 pounds of fuel. The fuel is 6.5 pounds per gallon. How many liters should the flight engineer order?

A) 5,825.
B) 6,500.
C) 7,110.

32. PLT016 FEX
How many minutes of dump time would be required to reach maximum landing weight at touchdown under the following conditions?

Number of engines 3
Cruise weight 171,000 lb
Max. landing weight 142,500 lb
Average fuel flow during dumping and descent to touchdown 3,170 lb/hr/eng
Time from start dump to landing 19 min
Fuel dump rate 2,300 lb/min
A) 7.7 minutes.
B) 11.1 minutes.
C) 12.4 minutes.

33. PLT012 FEX
An airplane has been cruising for 2 hours and 15 minutes at a speed of Mach .82. Total fuel consumed during this period has been 27,250 pounds. If Mach 1.0 is 595 knots, what has been the NM per 1,000 pounds of fuel?
A) 40.3 NM/1,000 pounds.
B) 43.7 NM/1,000 pounds.
C) 46.4 NM/1,000 pounds.

34. PLT127 FEX
For an airplane with a given gross weight and constant cruise speed, what is the relationship between fuel flow, temperature, and altitude? Fuel flow is higher when
A) both temperature and altitude are decreased.
B) both temperature and altitude are increased.
C) temperature is increased and altitude is decreased.

35. PLT117 FEX
Which is a reason for heating cockpit windows?
A) Deicing.
B) Anti-icing.
C) Prevent thermal shock.

36. PLT263 FEX
A turbojet aircraft is equipped with heated inlet ducts and airfoil leading edges. When is this type of anti-icing system usually activated during flight?
A) It is operated continuously while in flight.
B) At all times when the OAT is below freezing.
C) Whenever icing conditions are first encountered or are expected to occur.

37. PLT263 FEX
Anti-icing equipment should be activated
A) after entry into icing conditions.
B) before entry into icing conditions.
C) only after ice accumulation of ice on intakes and leading edges.

38. PLT209 FEX
Why will the EPR indication increase falsely if the Pt probe at the engine nose dome opening ices up?
A) The Pt probe vent will act as a Ps probe.
B) Anti-ice air pressurizes the nose dome and the vent hole causing an increase in EPR.
C) The reduced inlet area causes pressure to increase, and magnifies the influence of ram air pressure.

39. PLT109 FEX
How may the state of charge of a lead-acid battery be determined?
A) Ammeter.
B) Voltmeter.
C) Hydrometer.

40. PLT109 FEX
What is the nominal voltage rating of a fully charged lead-acid battery containing six cells?
A) 6 volts.
B) 12 volts.
C) 24 volts.

41. PLT109 FEX
What causes thermal runaway in a nickel-cadmium battery?
A) Low temperatures and high discharge rates.
B) Deep rapid discharges and low charge rates.
C) High temperatures and constant-voltage charging.

42. PLT109 FEX
What condition characterizes a thermal runaway?
A) Increased resistance of the battery to input current.
B) High temperature and undercharging at a constant rate.
C) Continuous rising current and increasing battery temperature.

43. PLT109 FEX
What type of gas is released by a nickel-cadmium battery during overcharging?
A) Toxic nickel hydroxide.
B) Oxygen and explosive hydrogen.
C) Highly combustible acetylene and oxygen.
44. PLT109  FEX
   What will neutralize the electrolyte from a lead-acid battery?
   A) Soap and water.
   B) Bicarbonate of soda.
   C) Boric acid, a solution of acetic acid, lemon juice, or vinegar.

45. PLT207  FEX
   What chemical is used for the electrolyte in nickel-cadmium dry cells?
   A) Nickel oxide.
   B) Nickel hydroxide.
   C) Potassium hydroxide.

46. PLT109  FEX
   If the airplane is equipped with a battery rated to deliver 45 amperes for 2.5 hours, what is the ampere-hour rating?
   A) 90.0 ampere-hour.
   B) 18.0 ampere-hour.
   C) 112.5 ampere-hour.

47. PLT207  FEX
   Which is a feature of a trip free circuit breaker?
   A) It is impossible to manually hold it in the closed position.
   B) It can be held in the closed position to power emergency circuits.
   C) It will tolerate more amperage than its rated capacity and heavy overloads can be carried for a short time.

48. PLT207  FEX
   In aircraft electrical systems, automatic reset circuit breakers
   A) are not used as circuit protective devices.
   B) are used in all circuits essential to safe operation of the aircraft.
   C) are found in locations where only temporary overloads are encountered.

49. PLT207  FEX
   What is the difference between a relay and a solenoid?
   A) Relays have movable cores.
   B) Solenoids have movable cores.
   C) Relays are used as mechanical control devices.

50. PLT207  FEX
   Fuses are sized to carry no more current than
   A) the generator will energize.
   B) the wires can carry.
   C) a holder will use.
51. PLT207 FEX
Thermal protectors are used to
A) stop windshield heaters from melting the glass.
B) protect motors from overheating.
C) allow pitot heaters to melt any icing near the tube.

52. PLT207 FEX
What type voltage will be produced if an ac generator is being driven, but there is no field excitation?
A) Real voltage.
B) Residual voltage.
C) Reactive voltage.

53. PLT207 FEX
What speed does a frequency meter give a direct indication of?
A) Engine N2.
B) Generator RPM.
C) CSD input speed.

54. PLT207 FEX
Which is a purpose of a transformer rectifier?
A) Converts 115 volts ac, 400-Hz to 28 volts dc.
B) Changes dc to alternating 26 volts or 115 volts, 400-Hz power.
C) Operates emergency flight instruments and radios from the airplane battery.

55. PLT207 FEX
Which is a feature of a parallel bus electrical system?
A) External power may be paralleled with operating generators.
B) The electrical load is automatically redistributed when one generator fails.
C) Each generator supplies power separately from the other generators to its respective bus.

56. PLT207 FEX
Which are protective functions of an ac generator control unit?
A) Reverse current, overexcitation, and overvoltage.
B) Undervoltage, differential fault, and manual paralleling.
C) Generator underspeed and bus-tie circuit-breaker automatic closing.

57. PLT207 FEX
What is residual voltage?
A) Voltage produced that is not in phase with the current.
B) Voltage stored in the generator exciter output windings.
C) Voltage produced by permanent magnets which starts the ac generator output.

58. PLT207 FEX
How are electrical generators rated?
A) Watts at rated voltage.
B) Amperes at rated voltage.
C) Voltage at rated amperes.

59. PLT207 FEX
What increases or decreases the voltage of a generator so it carries its share of the load?
A) Current limiter.
B) Paralleling circuit.
C) Reverse current cut-out relay.

60. PLT207 FEX
What causes a surge of current when incandescent lamps or electric heaters are first turned on? The resistance of filaments or elements
A) increases when heated.
B) is high until they are heated by the current.
C) decreases as the temperature reaches maximum.

61. PLT207 FEX
What is an advantage of using 115 volts, 400-Hz alternating current?
A) High voltage and low current reduces wire size and weight requirements.
B) Commutators may be used with ac motors to decrease repair intervals and costs.
C) The ac single-phase induction motors are self-starting, making it possible to use lightweight motors.

62. PLT207 FEX
A thermocouple is
A) a pair of dissimilar wires connected together.
B) made to detect light.
C) able to sense unsafe vibrations.

63. PLT207 FEX
The purpose of static wicks is to
A) decrease the probability of lightning damage to such elements as control hinges.
B) dissipate static charges from control surfaces into the air to prevent radio interference.
C) prevent radio static noise by equalizing charges produced in the aircraft structure.

64. PLT207 FEX
Which type of terminal is considered unsatisfactory for general electrical systems?
A) Swaged.
B) Crimped.
C) Soldered.

65. PLT207 FEX
What is a purpose of electrical bonding jumpers?
A) Decrease the probability of lightning damage to such elements as control hinges.
B) Minimize electrolytic corrosion by connecting the airplane parts to form an integral unit.
C) Provide a high-resistance path for electrical equipment, thereby eliminating ground wires.

66. PLT207 FEX
What unit of power is used in dc electrical circuits?
A) Volts.
B) Watts.
C) Amperes.

67. PLT327 FEX
What is the indication of a thermal discharge of a gaseous oxygen system?
A) The blowout disk is ruptured.
B) The pressure gauge indicates zero.
C) The heat sensitive paint marks change from white to black.

68. PLT326 FEX
What oxygen flow condition should exist if the oxygen regulator selector is placed in the emergency position and the supply lever is on?
A) 100 percent oxygen available on demand.
B) Continuous flow of diluted oxygen under positive pressure.
C) Continuous flow of 100 percent oxygen under positive pressure.

69. PLT327 FEX
What is one danger of any oxygen leak?
A) Oxygen being highly flammable may cause combustible materials to burn intensely.
B) Combustible materials will ignite more rapidly and burn with greater intensity in oxygen rich conditions.
C) Any ignition source may ignite highly explosive oxygen which over a period of time saturates the surroundings in poorly vented areas.

70. PLT326 FEX
What is an advantage of a chemical over a gaseous oxygen system?
A) Fire hazards are reduced by eliminating oxygen lines.
B) Chemical systems may be shutoff at any time after they are activated.
C) Reliability is improved by interconnecting individual chemical units.

71. PLT326 FEX
What type of oxygen system is used for passengers?
A) Demand.
B) Constant-flow.
C) Diluter-demand.

72. PLT525 FEX
(Refer to figure 3.) What is the approximate duration of the passenger oxygen system for the conditions shown?
Cabin altitude 15,000 ft
Passengers 120
Bottle pressure 1,500 PSI
A) 19 minutes.
B) 23 minutes.
C) 25 minutes.

73. PLT137 FEX
What is the purpose of ventilating air in a combustion heater?
A) Keeps the overhead thermal switch cool.
B) Transports heat to locations where it is needed.
C) Provides combustion air for ground blower operation.

74. PLT108 FEX
When may rain repellent be applied to a windshield?
A) Prior to entering rain.
B) After it starts raining.
C) Whenever the windshield is dirty.

75. PLT212 FEX
On a built-in carbon dioxide fire extinguishing system, how is a thermal discharge detected?
A) The thermal plug is missing from the side of the bottle.
B) The red plastic disc in the thermal discharge line is missing.
C) The yellow plastic disc in the thermal discharge line is discolored.

76. PLT139 FEX
When an airplane is equipped with a continuous-loop fire detection system, which is the most common cause of false fire warnings?
A) Moisture in the system.
B) Worn clamps, vibration and chafing of sensor loops.
C) Improper routing or connection of detector loops.

77. PLT346 FEX
Which of the following is considered a primary flight control?
A) Slats.
B) Elevator.
C) Dorsal fin.

78. PLT476 FEX
What is a disadvantage of a stabilizer and elevator located at the top of the vertical fin?
A) Heavier structure.
B) Undesirable spin characteristics.
C) Less effective fin and rudder due to the end plate action of the stabilizer location.
79. PLT139
When will the flap position warning system sound an alarm in the cockpit?
A) When the power lever is advanced and the flaps are positioned down.
B) When the power lever is retarded and the flaps are positioned down.
C) When the power lever is advanced and the flaps are not positioned for takeoff.

80. PLT473
Which of the following is considered a secondary flight control?
A) Rudder.
B) Servo tab.
C) Inboard aileron.

81. PLT473
A purpose of ground spoilers is to
A) reduce the wing's lift upon landing.
B) aid in rolling an airplane into a turn.
C) increase the rate of descent without gaining airspeed.

82. PLT118
Regarding the installation of all electric gyro instruments, which is correct?
A) All electric instruments must operate off DC current.
B) Each flight instrument must have a redundant vacuum counterpart.
C) The instruments must have some type of failure indicator showing a loss of power.

83. PLT253
One purpose of a fuel tank boost pump is to prevent vapor lock caused by low
A) temperature.
B) altitude operation.
C) atmospheric pressure.

84. PLT252
How is emergency fuel jettisoning accomplished?
A) Through individual outlets in each tank.
B) Through a common manifold and outlet.
C) Through pump pressure into the crossfeed manifold and out the vent lines.

85. PLT251
A safety advantage provided by a pressure fueling system is that it
A) reduces the time required for fueling.
B) reduces the chances for fuel contamination.
C) eliminates aircraft skin damage from hoses and nozzles.

86. PLT255
(Refer to figure 25.) How many liters of fuel are equal to 1,840 U.S. gallons?
A) 6,964.
B) 8,355.
C) 10,046.

87. PLT115 FEX
What will result if an insufficient amount of ADI fluid is injected during takeoff?
A) Temporary power increase.
B) Engine overheat and detonation.
C) Power will remain the same if the fuel/air ratio is increased.

88. PLT253 FEX
Which publication determines when an airplane may be flown with a fuel leak?
A) FAR Part 25.
B) The applicable manufacturer's manual.

89. PLT324 FEX
For engines equipped with Hamilton-Standard Hydromatic propellers the purpose of feeding the engine oil pressure pump from a standpipe is to
A) minimize the amount of oil that has to be diluted with fuel in cold weather.
B) provide oil for feathering the propeller in the event an oil line should break.
C) separate the circulating oil from the surrounding oil when the engine is started to permit a fast warmup of the engine.

90. PLT324 FEX
The purpose of the hopper tank is to
A) permit a fast warmup of the engine oil.
B) collect sludge and particles from the oil in the event the oil filter becomes obstructed.
C) provide engine oil to feather the propeller in the event an oil line should break and all of the engine oil is pumped overboard.

91. PLT324 FEX
What is the oil viscosity grade? The oil viscosity grade
A) indicates how fluid an oil is at low temperature under laboratory conditions.
B) is an arbitrary method of stating the rate of change in viscosity of an oil with changes of temperature.
C) is the weight of any oil compared with the weight of an equal volume of oil from the American Petroleum Institute (API) gravity scale.

92. PLT251 FEX
Why are jet fuels more susceptible to water contamination than aviation gasoline?
A) Jet fuel has a higher viscosity than gasoline.
B) Jet fuel is lighter than gasoline, and suspends water easier.
C) Condensation is greater because of large temperature changes at high altitudes.

93. PLT273 FEX
What should hydraulic flexible hose be inspected for on preflight?
A) Slack between fittings.
B) Hose supports at least every eighteen inches.
C) Layline identification marks spiral clockwise.

94. PLT138 FEX
When inflating tires from a high pressure bottle, always
A) use industrial oxygen.
B) use a pressure regulator on the bottle.
C) inflate directly from the nitrogen bottle slowly.

95. PLT337 FEX
During the walkaround inspection, you observe covers over the pitot probes. Which items will be affected if the covers are not removed?
A) Airspeed, altimeter, and autopilot.
B) Flight recorder, airspeed, and autopilot.
C) Flight recorder, autopilot, instantaneous vertical speed indicator, and airspeed.

96. PLT337 FEX
What will result if the instrument static pressure line becomes disconnected inside a pressurized cabin during cruise flight?
A) The altimeter and airspeed indicator will both read low.
B) The altimeter and airspeed indicator will both read high.
C) The altimeter will read low and the airspeed indicator will read high.

97. PLT499 FEX
What recovery would be appropriate in the event of compressor stall?
A) Reduce the thrust lever and then rapidly advance the thrust lever to decrease the angle of attack on the compressor blades, creating more airflow.
B) Reduce the thrust lever and then follow the procedures in the AFM/POH/CFM.
C) Advance the thrust lever slowly to increase airflow and decrease the angle of attack on one or more compressor blades.

98. PLT365 FEX
If the line between the MAP gauge and the engine induction system has a leak, the gauge will indicate
A) ambient pressure.
B) 29.92 inches of MAP.
C) low when operating at a MAP above atmospheric pressure.

99. PLT365 FEX
What is the sequence of events for a reciprocating engine to convert chemical to mechanical energy?
A) Ignition, compression, power, and exhaust.
B) Compression, ignition, intake, power, and exhaust.
C) Intake, compression, ignition, power, and exhaust.
100. PLT249 FEX
Preignition is indicated by
A) intermittent firing and low cylinder temperatures.
B) explosions from the exhaust system with torching or afterburning.
C) engine roughness and a sudden increase in cylinder head temperatures.

101. PLT499 FEX
Exceeding the engine temperature limitations may result in
A) discoloration of the compressor blades.
B) rippling of the trailing edge of the compressor blades.
C) hairline cracks at right angles to the turbine blade leading and trailing edges.

102. PLT499 FEX
(Refer to figure 9.) Where is the fan inlet case located?
A) Location 1.
B) Location 2.
C) Location 3.

103. PLT499 FEX
The two basic elements of the turbine section of a turbine engine are the
A) rotor and stator.
B) bucket and expander.
C) impeller and diffuser.

104. PLT502 FEX
(Refer to figure 1.) Which signal at night means stop?
A) Figure 12.
B) Figure 13.
C) Figure 15.

105. PLT212 FEX
What identifies a fire extinguisher used for brake fires?
A) A square with the letter B.
B) A circle with the letter C.
C) A star with the letter D.

106. PLT212 FEX
Which is the most effective extinguishing agent for use on an electrical fire?
A) Carbon dioxide.
B) Methyl bromide.
C) Carbon tetrachloride (Halon 04).

107. PLT330 FEX
A fire in flight can quickly lead to
A) hypemic hypoxia.
B) stagnant hypoxia.
C) fumic hypoxia.

108. PLT318 FEX
What does declaring minimum fuel to ATC imply?
A) Traffic priority is needed to the destination airport.
B) Emergency handling is required to the nearest useable airport.
C) An emergency situation is possible should an undue delay occur.

109. PLT331 FEX
How many hours delay is recommended before going to flight altitudes of up to 8,000 feet after scuba diving without controlled ascent (nondecompression stop)?
A) No restriction.
B) 12 hours.
C) 24 hours.

110. PLT388 FEX
For what purpose may information obtained from cockpit voice recorders and flight data recorders not be used?
A) Identifying malfunctions and irregularities in aircraft systems.
B) Determining causes of accidents and occurrences under investigation by the National Transportation Safety Board (NTSB).
C) Determining any certificate action or civil penalty arising out of an accident or occurrence.

111. PLT440 FEX
Which flight crewmember nonessential conversation is allowed below 10,000 feet?
A) Discussing stock market reports during taxi.
B) None.
C) Confirming airplane logbook entries during climb when clear of the airport traffic area.

112. PLT405 FEX
Each crewmember shall have available for individual use on each flight a
A) quick-donning type oxygen mask.
B) flashlight in good working order.
C) hand fire extinguisher suitable for extinguishing Class A, B, and C fires.

113. PLT386 FEX
A crewmember certificate may be issued by the FAA to flight crewmembers on U.S. registered aircraft engaged in
A) international air commerce.
B) flight crewmember training only.
C) supplemental air carrier operations.
Which requirement must be met by all flight engineers every 6 months before they can serve on an air carrier flight under 14 CFR part 121?
A) Line check or route check.
B) Recurrent flight and ground training.
C) 50 hours of flight time or a flight check.

115. PLT438 FEX
How much supplemental oxygen must pressurized air carrier transport powered airplanes carry for each flight crewmember on flight deck duty when operating at flight altitudes above 10,000 feet?
A) A minimum of 1 hours’ supply.
B) A minimum of 2 hours’ supply.
C) A minimum of 30 minutes’ supply.

116. PLT410 FEX
During what situation may an airplane requiring a flight engineer be operated under 14 CFR part 91?
A) Test flight.
B) Revenue cargo flight.
C) Passenger flight with compensation.

117. PLT203 FEX
Which is true concerning the troposphere?
A) It extends to a uniform height at all latitudes.
B) It is thicker over the Equator than over the poles.
C) It is the dividing line between the stratosphere and the atmosphere.

118. PLT226 FEX
The temperature and dewpoint spread is small and decreasing, and the temperature is +62 °F. Which type of weather is most likely to develop?
A) Rain showers.
B) Thunderstorms.
C) Fog or low clouds.

119. PLT263 FEX
A common type of ground- or surface-based temperature inversion is that produced by
A) ground radiation on clear cool nights when the wind is light.
B) warm air being lifted rapidly in the vicinity of mountainous terrain.
C) the movement of colder air over warm air, or the movement of warm air under cold air.

120. PLT274 FEX
An in-flight condition necessary for structural icing to form is
A) visible moisture.
B) stratiform clouds.
C) cirrostratus clouds.
121. PLT344 FEX
What is the lowest temperature that water droplets may remain in a liquid state?
A) 0 °C.
B) 0 °F.
C) -40 °C.

122. PLT173 FEX
What atmospheric condition will decrease air density?
A) Decreasing humidity.
B) Decreasing pressure.
C) Decreasing temperature.

123. PLT132 FEX
What will be the approximate altimeter indication after failing to reset the local barometric pressure of 30.57 after descending from FL 250 to a field elevation of 650 feet?
A) Sea level.
B) 715 feet.
C) 1,300 feet.

124. PLT021 FEX
(Refer to figure 45.) What is the maximum payload under operating conditions No. 1?
A) 19,300 pounds.
B) 24,000 pounds.
C) 43,300 pounds.

125. PLT314 FEX
The CG of an airplane is computed along the
A) lateral axis.
B) vertical axis.
C) longitudinal axis.

126. PLT313 FEX
The CG of a large airplane is normally located in the fuselage at a point expressed in
A) inches from the forward CG limit.
B) percent of mean aerodynamic chord aft of LEMAC.
C) percentage of MAC aft of the leading edge of the wing.

127. PLT314 FEX
Weight X Arm divided by the Reduction Factor is the formula used to determine
A) index units.
B) total moments.
C) CG from LEMAC.

128. PLT021 FEX
What is the loaded CG in percent of MAC under operating conditions No. 1?
A) 28.9 percent.
B) 30.5 percent.
C) 32.9 percent.

What is the airplane weight at the end of cruise under operating conditions No. 2?
A) 100,860 pounds.
B) 101,900 pounds.
C) 110,900 pounds.

What is the maximum payload under these conditions?

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic operating weight</td>
<td>150,000 lb</td>
</tr>
<tr>
<td>Max. zero fuel weight</td>
<td>230,000 lb</td>
</tr>
<tr>
<td>Max. landing weight</td>
<td>245,000 lb</td>
</tr>
<tr>
<td>Max. takeoff weight</td>
<td>320,000 lb</td>
</tr>
<tr>
<td>Fuel tank load</td>
<td>94,500 lb</td>
</tr>
<tr>
<td>Est. fuel burn en route</td>
<td>71,500 lb</td>
</tr>
</tbody>
</table>

A) 72,000 pounds.
B) 80,000 pounds.
C) 84,000 pounds.

How much weight can be added at Station 1600 without exceeding the aft CG limit?

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft weight</td>
<td>83,000 lb</td>
</tr>
<tr>
<td>CG location</td>
<td>Station 900</td>
</tr>
<tr>
<td>Aft CG limit</td>
<td>Station 905</td>
</tr>
</tbody>
</table>

A) 166 pounds.
B) 597 pounds.
C) 697 pounds.

Based on this information, the CG will be located how far aft of datum?

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight X</td>
<td>1,330 lb at 117 in. aft of datum</td>
</tr>
<tr>
<td>Weight Y</td>
<td>1,110 lb at 110 in. aft of datum</td>
</tr>
<tr>
<td>Weight Z</td>
<td>750 lb at 210 in. aft of datum</td>
</tr>
</tbody>
</table>

A) 126.43 inches.
B) 136.43 inches.
C) 142.43 inches.

A reason for using a crossfeed fuel system is to
A) be able to purge any fuel tank.
B) jettison fuel during emergencies.
C) help maintain the aircraft’s center of gravity.

134. PLT021 FEX
(Refer to figure 34.) What is the new CG after adding weight under operating conditions No. 1?
A) 20.9 percent.
B) 25.8 percent.
C) 27.9 percent.

135. PLT021 FEX
(Refer to figure 37.) What is the loaded CG in percent of MAC under operating conditions No. 3?
A) 29.9 percent.
B) 30.6 percent.
C) 32.0 percent.

136. PLT021 FEX
(Refer to figure 41.) What is the new CG after adding weight under operating conditions No. 1?
A) 21.1 percent.
B) 23.4 percent.
C) 26.7 percent.

137. PLT021 FEX
(Refer to figure 33.) What is the loaded CG in percent of MAC under operating conditions No. 1?
A) 24.8 percent.
B) 25.8 percent.
C) 26.5 percent.

138. PLT021 FEX
Before a cargo change is made, the following information is known about an airplane.
Aircraft weight 175,000 lb
CG 29.5 percent of MAC
Length of MAC 860.2 to 1040.9 in
If 6,500 pounds of cargo is removed from an average location of Station 1170.0, what is the new CG relative to MAC?
A) 24.0 percent.
B) 26.8 percent.
C) 27.6 percent.

139. PLT021 FEX
(Refer to figure 31.) Determine the CG in percent of MAC.
Basic operating weight 105,000 lb
Basic operating index (Moment/1,000) 92,827.0
MAC 860.2 to 1040.9 in
Passenger load:

Fwd compartment 22
Aft compartment 95

Cargo load:

Fwd hold 1,950 lb
Aft hold 900 lb

Fuel load:

Tanks 1 and 3 (each) 11,500 lb
Tank 2 Full

A) 26.2 percent of MAC.
B) 27.1 percent of MAC.
C) 27.9 percent of MAC.

140. PLT021 FEX

The gross weight of the airplane is 155,000 pounds. How much weight must be moved from Station 1028.0 to Station 582.0 to move the CG forward 1.2 inches?

A) 352 pounds.
B) 418 pounds.
C) 516 pounds.

141. PLT121 FEX

What minimum weight of cargo must be shifted from the aft to the forward compartment to bring the CG within limits?

Total weight 165,000 lb
MAC Station 860.2 to 1040.9
CG 34.0 percent of MAC
Aft CG limit 32.0 percent of MAC
Cargo centroids:
Fwd 582 in
Aft 1028 in

A) 740 pounds.
B) 1,032 pounds.
C) 1,338 pounds.

142. PLT021 FEX

May 1,000 pounds of baggage be shifted from Station 30.0 to Station 120.0 without exceeding the aft CG limit?

Total weight 147,500 lb
CG location Station 115.8
Aft CG limit Station 118.0

A) Yes, the CG would be located at Station 115.19.
B) No, the new CG would be located at Station 118.41.
C) Yes, the new CG would be located at Station 116.41.
(Refer to figure 31.) Determine the CG in inches aft of datum.

<table>
<thead>
<tr>
<th>Basic operating weight</th>
<th>105,000 lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic operating index (Moment/1,000)</td>
<td>92,827.0</td>
</tr>
<tr>
<td>MAC</td>
<td>860.2 to 1040.9 in</td>
</tr>
</tbody>
</table>

Passenger load:

<table>
<thead>
<tr>
<th>Fwd compartment</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aft compartment</td>
<td>105</td>
</tr>
</tbody>
</table>

Cargo load:

<table>
<thead>
<tr>
<th>Fwd hold</th>
<th>1,800 lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aft hold</td>
<td>800 lb</td>
</tr>
</tbody>
</table>

Fuel load:

<table>
<thead>
<tr>
<th>Tanks 1 and 3 (each)</th>
<th>11,000 lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank 2</td>
<td>Full</td>
</tr>
</tbody>
</table>

A) 907.6 inches.
B) 908.2 inches.
C) 910.8 inches.

144. PLT240 FEX
If the landing gear on an airplane moves forward during retraction, the
A) total moments will decrease.
B) total moments will increase.
C) total moments will remain the same.

145. PLT021 FEX
(Refer to figure 43.) What is the new CG after the weight is moved from the forward to the aft location under operating conditions No. 1?
A) 13.5 percent.
B) 14.7 percent.
C) 15.3 percent.

146. PLT021 FEX
What minimum weight of cargo must be shifted from the aft to the forward compartment to bring the CG within limits.

Total weight 150,000 lb

<table>
<thead>
<tr>
<th>MAC</th>
<th>Station 860.2 to 1040.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>33.5 percent of MAC</td>
</tr>
<tr>
<td>Aft CG limit</td>
<td>32.0 percent of MAC</td>
</tr>
</tbody>
</table>

Cargo centroids:

<table>
<thead>
<tr>
<th>Fwd</th>
<th>582 in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aft</td>
<td>1028 in</td>
</tr>
</tbody>
</table>

A) 518 pounds.
B) 912 pounds.
C) 1,050 pounds.
(Refer to figure 35.) What is the new CG after the weight is moved from the forward to the aft location under operating conditions No. 1?
A) 18.3 percent.
B) 25.4 percent.
C) 28.7 percent.