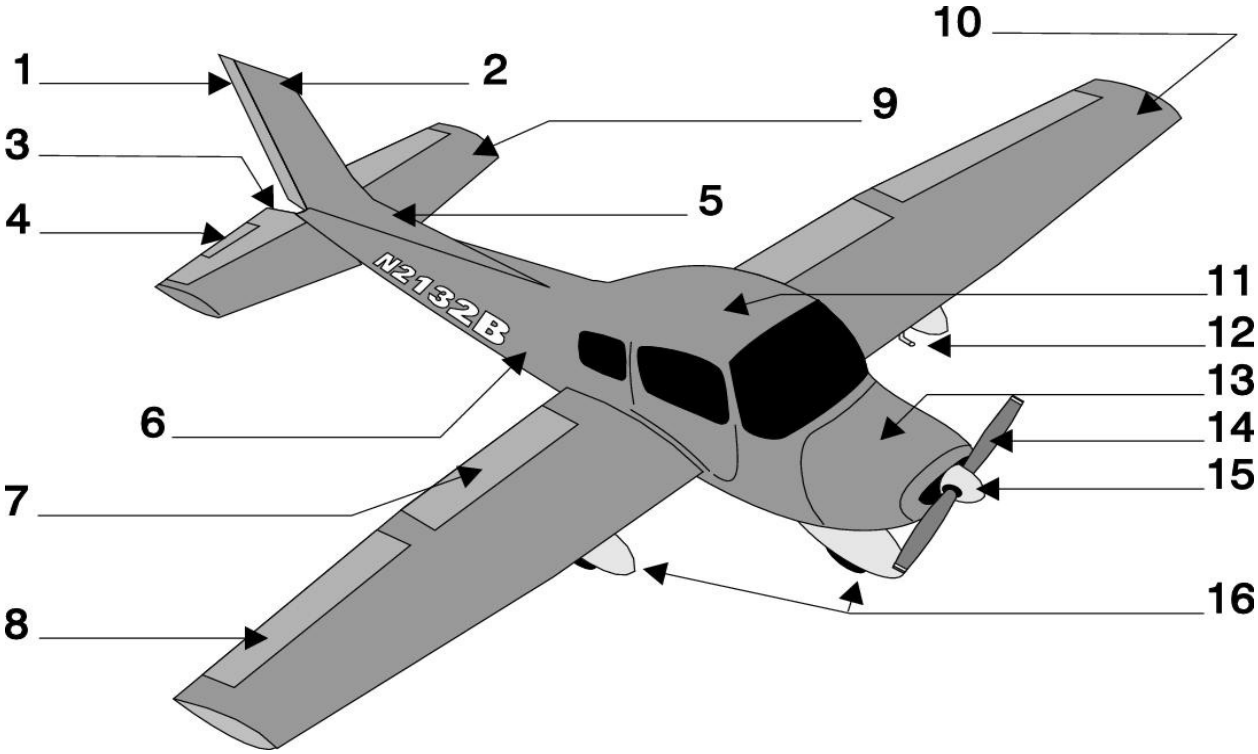
Sport Pilot Stage 1 Exam—Chapters 1-6

1-16. Please label the following.



16. The four forces acting on an airplane in flight are
A. lift, weight, thrust, and drag.
B. lift, weight, gravity, and thrust.
C. lift, gravity, power, and friction.

17. The chord line is an imaginary line connecting the
A. trailing edge of the wing with the leading edge.
B. leading edge of the wing with the trailing edge.
C. wing root with the wing tip.

18. The term “angle of attack” is defined as the angle
A. between the wing chord line and the relative wind.
B. between the airplane's climb angle and the horizon.
C. formed by the longitudinal axis of the airplane and the chord line of the wing.

19. Wind deflected downward by the airfoil creates a/an _____ movement of the wing.
A. downward
B. sideways
C. upward

20. Whether an airplane exceeds its critical angle of attack is independent of
A. attitude or airspeed.
B. relative wind.
C. the angle between the chord line and relative wind.

21. The two basic forms of drag are:
A. parasite and induced drag.
B. planform and interference drag.
C. good and bad drag.

22. Wingtip vortex action increases with an increase in
A. airspeed.
B. angle of attack.
C. thrust.

23. What is one purpose of wing flaps?
A. To enable the pilot to make steeper approaches to a landing without increasing the airspeed.
B. To relieve the pilot of maintaining continuous pressure on the controls.
C. To decrease wing area to vary the lift.

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24. In what flight condition is torque effect the greatest in a single-engine airplane?
A. Low airspeed, high power.
B. Low airspeed, low power.
C. High airspeed, high power.

25. Why is frost considered hazardous to flight?
A. Frost changes the basic aerodynamic shape of the
airfoils, thereby decreasing lift.
B. Frost slows the airflow over the airfoils, thereby increasing control effectiveness.
C. Frost spoils the smooth flow of air over the wings, thereby decreasing lifting capability.

26. Fill in the blanks:
Name the four cycles of an airplane engine:
_____, _____, _____, _____ .

27. The operating principle of float-type carburetors is based on the
A. automatic metering of air at the venturi as the aircraft gains altitude.
B. difference in air pressure at the venturi throat and the air inlet.
C. increase in air velocity in the throat of a venturi causing an increase in air pressure.

28. Which condition is most favorable for the development of carburetor icing?
A. Any temperature below freezing and a relative humidity of less than 50 percent.
B. Temperature between 32°F and 50°F and low humidity.
C. Temperature between 20°F and 70°F and high humidity.

29. High cylinder head temperatures also lead to something known as _____.
A. pre-ignition
B. detonation
C. combustion

30. What action can a pilot take to aid in cooling an engine that is overheating during a climb?
A. Reduce rate of climb and increase airspeed.
B. Reduce climb speed and increase RPM.
C. Increase climb speed and increase RPM.

31. The uncontrolled firing of the fuel/air charge in advance of normal spark ignition is known as
A. combustion.
B. preignition.
C. detonation.

32. The purpose of the slipper clutch in the Rotax engine is to
A. keep the gear box from slipping
B. protect the crankshaft in the event of a sudden stoppage such as a prop strike
C. keep the propeller hub from slipping off of the engine

33. What type of coolant should be used in a Rotax engine?
A. 50/50 antifreeze and water
B. waterless coolant
C. either 50/50 or waterless, but do not mix the two

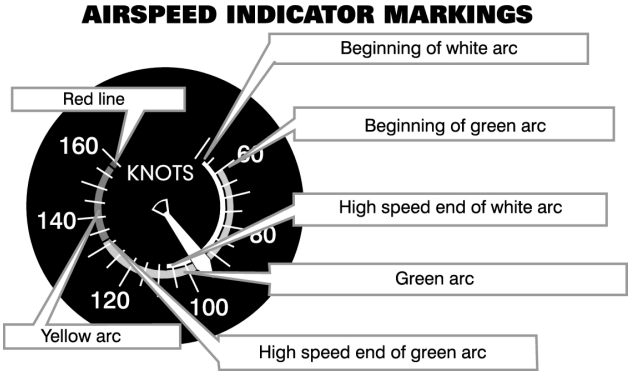
34. Electrons flow from the _____ to the _____ side of a battery.
A. negative, positive
B. positive, negative
C. positive, neutral

35. It's the _____ which allows you to operate the airplane's electrical equipment when the engine isn't running or when the alternator fails in flight.
A. alternator
B. propeller
C. battery

36. Excess voltage resulting from a battery overcharge can _____ battery fluid (electrolyte), damaging the batteryand possibly causing a battery ____.
A. replenish, freeze
B. boil off, fire
C. boil off, charge

37. If your airplane has a low-voltage light, it can illuminate
A. during low engine idle.
B. when the alternator has been taken offline.
C. Both of the above.

38. If the pitot tube and outside static vents become clogged, which instruments would be affected?
A. The altimeter, airspeed indicator, and turn-and-slip indicator.
B. The altimeter, airspeed indicator, and vertical speed indicator.
C. The altimeter, attitude indicator, and turn-and-slip indicator.



39. **]** Refer to the figure above.
What is the maximum flaps-extended speed?
A. 53 knots.
B. 107 knots.
C. 132 knots.

40. Calibrated airspeed is _____ airspeed corrected for _____ or_____ errors.
A. true, installation, position
B. indicated, installation, position
C. indicated, temperature, coriolis

41. Prior to takeoff, the altimeter should be set to which altitude or altimeter setting?
A. The current local altimeter setting, if available, or the departure airport elevation.
B. The corrected density altitude of the departure airport.
C. The corrected pressure altitude for the departure airport.

42. If a pilot changes the altimeter setting from 30.11 to 29.96, what is the approximate change in indication?
A. Altimeter will indicate .15" Hg higher.
B. Altimeter will indicate 150 feet higher.
C. Altimeter will indicate 150 feet lower.

43. Pressure altitude is the height above a _____, which is nothing more than a fancy phrase for _____ reference point. This reference point is what the engineer's altimeter would have read if temperature and pressure at sea level were 59°F and 29.92" Hg.
A. reference point, true altitude
B. standard day plane, a real
C. standard datum plane, an imaginary

44. The heading indicator must be periodically reset to a known heading because of something known as
A. gyroscopic drift.
B. acceleration errors.
C. turning errors.

45. In the northern hemisphere, the magnetic compass will normally indicate a turn toward the south when
A. a left turn is entered from an east heading.
B. a right turn is entered from a west heading.
C. the aircraft is decelerated while on a west heading.

46. Name the four fundamentals involved in maneuvering an aircraft.
A) Power, pitch, bank, and trim.
B) Thrust, lift, turns, and glides.
C) Straight-and-level flight, turns, climbs, and descents.

47. With respect to the certification of airmen, which is a category of aircraft?
A. Gyroplane, helicopter, airship, free balloon.
B. Airplane, rotorcraft, glider, lighter-than-air, powered-lift.
C. Single-engine land and sea, multi-engine land and sea.

48. When pilots refer to the make and model of airplane they fly, which of the following are they referring to:
A. Flight Design CT LS, Tecnam P92 Eaglet, Remos GX
B. single-engine land or single-engine sea.
C. airplane, glider, rotorcraft, powered-lift.

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49. What document(s) must be in your personal possession while operating as pilot in command of an aircraft?
A. Certificates showing accomplishment of a checkout in the aircraft and a current flight review.
B. A pilot certificate with an endorsement showing accomplishment of an annual flight review and a pilot logbook showing recency of experience.
C. An appropriate pilot certificate, photo ID, appropriate logbook endorsements, and a current medical certificate or US driver's license.

50. Regulations prohibit you from acting as pilot in command or as a required crewmember (copilot or flight engineer, for instance) for _____ hours after consuming alcohol.
A. 24
B. 12
C. 8

51. Regarding general privileges and limitations, a sport pilot may
A. act as pilot in command of an aircraft traveling for business.
B. share the operating expenses of a flight with a passenger.
C. not be paid in any manner for the operating expenses of a flight.

52. Which preflight action is specifically required of the pilot prior to each flight?
A. Check the aircraft logbooks for appropriate entries.
B. Become familiar with all available information concerning the flight.
C. Review wake turbulence avoidance procedures.

53. Which aircraft has the right of way over the other aircraft listed?
A. Airship.
B. Balloon.
C. Gyroplane.

54. If the aircraft's radio fails, what is the recommended procedure when landing at a controlled airport?
A. Observe the traffic flow, enter the pattern, and look
for a light signal from the tower.
B. Enter a crosswind leg and rock the wings.
C. Flash the landing lights and cycle the landing gear.

55. In order to fly through Class D airspace or land at the primary airport, you must
A. establish two-way radio communication with the ATC facility responsible for that airspace.
B. establish two-way radio communication with any airplanes in that airspace.
C. establish two-way radio communication with the nearest Flight Service Station only.

56. Under what condition, if any, may pilots fly through a restricted area?
A. When flying on airways with an ATC clearance.
B. With the controlling agency's authorization.
C. Regulations do not allow this.

57. An operable 4096-code transponder with an encoding altimeter is required in which airspace?
A. Class A, Class B (and within 30 miles of the Class B primary airport), and Class C.
B. Class D and Class E (below 10,000 feet MSL).
C. Class D and Class G (below 10,000 feet MSL).

58. Which incident requires an immediate notification be made to the nearest NTSB field office?
A. A complete loss of information, excluding flickering, from more than 50 percent of an aircraft's cockpit displays which you know as your primary flight display
B. An in-flight radio communications failure.
C. An in-flight generator or alternator failure.

59. The operator of an aircraft that has been involved in an incident is required to submit a report to the nearest field office of the NTSB
A. within 7 days.
B. within 10 days.
C. when requested.

60. To determine the expiration date of the last condition inspection, a person should refer to the
A. airworthiness certificate.
B. registration certificate.
C. aircraft maintenance records.

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1. Rudder
2. Vertical stabilizer
3. Elevator
4. Trim Tab
5. Empennage
6. Fuselage
7. Flap
8. Aileron
9. Horizontal stabilizer
10. Wing
11. Cockpit
12. Pitot tube
13. Engine cowling
14. Propeller
15. Spinner
16. Landing gear
17. A
18. B
19. A
20. A
21. A
22. B
23. A
24. C
25. C
26. intake, compression, power, exhaust
27. B
28. C
29. B
30. A
31. B
32. B
33. C
34. A
35. C
36. B
37. C
38. B
39. B
40. B
41. A
42. C
43. C
44. A
45. C
46. A
47. B
48. A
49. C
50. C
51. A
52. B
53. B
54. A
55. A
56. B
57. A
58. A
59. C
60. C