

Pre-Solo Written Exam

61.87(b) *Aeronautical knowledge*. A student pilot must demonstrate satisfactory aeronautical knowledge on a knowledge test that meets the requirements of this paragraph:

- (1) The test must address the student pilot's knowledge of --
 - (i) Applicable sections of parts 61 and 91 of this chapter;
 - (ii) Airspace rules and procedures for the airport where the solo flight will be performed; and
 - (iii) Flight characteristics and operational limitations for the make and model of aircraft to be flown.
- (2) The student's authorized instructor must --
 - (i) Administer the test; and
 - (ii) At the conclusion of the test, review all incorrect answers with the student before authorizing that student to conduct a solo flight.

Student name: _____

Instructor name: _____

Date graded: _____

The airport to be used is: _____

The aircraft to be used is (make and model): _____

Instructions:

- The first part of this test is closed book.
- The second part of this test is open book and may be completed at home. For this portion, *list the appropriate reference* (e.g. FAR citation or POH page number) for each question in addition to the answer.
- References to use:
 - o FAR/AIM
 - o Current terminal and sectional charts
 - o Current Airport/Facility Directory
 - o Aircraft's Pilot Operating Handbook

Open Book Exam

Part 61

- 1) What is the complete list of items you must carry with you to fly solo legally?

- 2) How long is a student pilot certificate valid?

- 3) How long is your medical certificate valid, taking into account the certificate class and your age?

- 4) If you receive a solo endorsement for a particular make and model (e.g. Cessna 152), can you solo a similar model (e.g. Cessna 172) without additional endorsements?

- 5) When does the solo endorsement on a student pilot certificate expire?

- 6) When does the solo endorsement in a logbook expire?

- 7) What is required to be able to solo at night? What is the definition of “night” in this case?

- 8) What is required to be able to solo in Class B airspace?

- 9) What is required to be able to solo in Class C airspace?

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- 10) If your solo endorsement expires, can an instructor who has never flown with you renew your solo endorsement?
- 11) Assume you have the appropriate endorsements to fly to another area airport.
- a) Is it OK to fly to the other airport for the purpose of having lunch with a business associate?
 - b) Is it OK to fly to the other airport for the purpose of having lunch by yourself and then return?
 - c) A friend offers to pay you \$1 if you'll deliver a package for him to the other airport. Is this OK?
- 12) What is the minimum visibility required for solo flight by the FARs?
- 13) Assume you have the appropriate endorsements to fly from PAO to LVK, both of which have clear weather. The entire East Bay area has a low fog that prevents viewing the ground, and you must fly over this area to go to LVK. Is it OK to make the flight?
- 14) What is the maximum distance you can fly from your point of departure while practicing maneuvers?

Part 91

- 15) Who is the Pilot In Command during a solo flight, and how is the flight logged?
- 16) What preflight action is required before each solo flight?
- 17) Who is responsible for determining if an aircraft is airworthy?

- 18) What documents must be present in the aircraft for it to be airworthy?
- 19) For each of the following items, say whether the aircraft is legal to fly for day VFR if the item is broken, using only the FAR's minimum required equipment list:
- Altimeter: _____
- Attitude indicator: _____
- Airspeed indicator: _____
- VSI: _____
- Tachometer (RPM): _____
- Ammeter: _____
- Clock: _____
- 20) The stall warning horn is broken. Is it legal to fly, and if so, what do you need to do? Use all available references.
- 21) The outside air temperature gauge is broken. Is it legal to fly, and if so, what do you need to do? Use all available references.
- 22) What is the minimum ceiling and visibility allowed for flight in Class D airspace when operating below the ceiling?
- 23) What are the cloud clearance requirements in Class E airspace?
- 24) When two aircraft are approaching each other head-on, in which direction should each pilot alter course?
- 25) What is the maximum altitude you can legally fly without ever using oxygen?

- 26) What is the minimum safe altitude anywhere? Over a congested area?
- 27) What are the minimum fuel reserves for day VFR and night VFR?
- 28) When must an aircraft's position lights be on?
- 29) Define the meaning of the following light signals from a tower when on the ground and when airborne:

Ground

Flight

Steady green:

Flashing green:

Steady red:

Flashing red:

Alternating red & green:

Flashing white:

- 30) How long must you wait after consuming alcohol before you can legally fly? What is the maximum blood alcohol content? Are there any other restrictions on flying after drinking alcohol?

Airspace Rules and Procedures

- 31) What is the airport's ATIS frequency, if any?
- 32) What is the airport's tower or CTAF frequency?
- 33) What is the airport's ground frequency, if any?

34) What runways are available? For each runway, give its length, traffic pattern altitude, and traffic pattern direction (left/right).

35) What are the noise abatement procedures, if any?

36) Describe the standard departure to all practice areas, including airspace limitations and cues used to avoid airspace incursions. Describe any standard flight restrictions or restricted areas.

37) What are the current blanket TFRs?

Aircraft Characteristics and Limitations

- 38) When should carburetor heat be used?
- 39) What is the total fuel capacity? How much of this is useable, and how much flight time does this provide at full cruise power?
- 40) What is the minimum operating oil level?
- 41) What is the maximum allowable RPM drop during the magneto check?
- 42) What is the weight and balance with just you in the airplane and full fuel, and with just you and no fuel? Are the weight and C.G. within allowable limits in each case?
- 43) Will the engine still run with the master switch turned off?
- 44) What is the minimum safe altitude for stall practice?