

LESC PRE-SOLO WRITTEN EXAM

Student: _____

Date: ____/____/____

Instructor: _____

This exam is an open book take home exam. You must take this exam and review with your Instructor before being authorized to solo. Answers may be found in the Glider Flying Handbook (GFH), Federal Aviation Regulations (FAR), appropriate Aircraft Manual, Glider Basics, First Flight to Solo (GB), the Los Angeles Sectional Chart and the LESC Standard Operating Procedures (SOP) manual. The *Soaring Flight Manual (SFM)* is no longer in print, but may also be used. Designations in parentheses following some questions designate where the answer(s) may be found. The designation of CFI-G means to obtain this information from your Instructor. There may be more than one right answer, and answers may vary according to source.

- 1). List the make and model of glider you will solo: _____ (CFI-G)
- 2). List the appropriate performance limitations and speeds of the glider you will solo (in MPH):
(Aircraft Manual & Glider Flying Handbook 7-33, *Soaring Flight Manual* 2-8,9)

	<u>SOLO</u>	<u>DUAL</u>
Stall speed	_____	_____
Stall speed at 45° bank	_____	_____
Stall speed at 60° bank	_____	_____
Minimum sink speed	_____	_____
Pattern speed	_____	_____
Maneuvering speed	_____	_____
Never exceed speed	_____	_____
Best L/D speed	_____	_____
Best L/D	_____	_____
What is the sink rate @best L/D	_____ fpm	_____ fpm
Maximum pilot weight solo	_____ (2-33 special weight and balance chart)	
Minimum pilot weight solo	_____ (2-33 special weight and balance chart)	

3). What are the six warning signs of an imminent stall? (GB 71)

4). In the glider you are going to solo, describe the speed adjustment you would make in sinking air while in search of a thermal? (CFI-G)

5). In the glider you are going to solo, what is the best glide angle you can get with a 40 MPH headwind? (CFI-G)

6). In the glider you are going to solo, at what altitude must you be to make it to the IP at 2,000' MSL indicated, if you are at the west end of Lake Elsinore (5 miles away)? Assume a 10 mph headwind and a 50% safety factor. (CFI-G)

7). What great hazard results from flight at less than placarded minimum solo pilot weight? (GFH 5-11, *SFM 2-3*)

8). You are in a right turn and your yaw string is deflected (pointing to) the right. What's happening? (GFH 7-25, *SFM 3-4*)

9). In question #8, what should you do to correct the situation? (CFI-G)

10). In question #8, why would this be dangerous when you're low or in the pattern? (GFH 7-26,31, *SFM 14-5,6,7*)

11). Can a pilot no matter how skillful, maintain control in cloud (zero visibility) without gyroscopic instruments? Why or why not? (GFH 1-12,13, *SFM 5-9,10*)

12). You are being lifted towards the base of a building cumulo-nimbus cloud. What dangers exist? (GFH 9-13,14, *SFM 4-11*)

13). What should you do to effect an emergency descent in question #12? (CFI-G)

14). For both soaring and safety issues, describe what phenomenon are indicated by the following clouds: (GFH Chapter 9, *SFM Chapter 4*)

Cumulo-nimbus _____

Cumulus _____

Lenticular _____

Rotor _____

15). Describe the following glider to towplane signals: (GB 56,GFH 7-2,11, *SFM 12-4,5*)

Ready for takeoff _____

Turn right or left _____

Speed up _____

Slow down _____

Box wake _____

Can't release _____

16). Which direction should you go when you signal Can't Release? Why? (GB 56, *SFM 12-4,5*)

17). Describe the following towplane to glider signals: (GB 56, GFH 7-2, *SFM 12-4,5*)

Get off ***NOW!*** _____

Something's wrong _____

Can't release _____

18). What is the minimum and maximum tow rope strength for a glider flying at 950 lbs., with a maximum gross weight of 1040 lbs? (GFH 6-3, FAR 91.309, *SFM 12-5*)

Minimum _____ Maximum _____

19). What degree of bank or pitch when exceeded, requires a parachute and is considered an aerobatic maneuver? (FAR 91.307)

Bank _____ Pitch _____

20). When performing an aerobatic maneuver, what is the minimum altitude the maneuver must be completed? (FAR 91.303)

_____ feet AGL or MSL? _____

21). What is the maximum altitude you can fly VFR in the U.S. Airspace system? (GFH 10-12, *SFM 7-3*)

_____ MSL

22). What is the maximum altitude you can fly continuously without oxygen? (FAR 91.211, GFH 6-4)

_____ MSL

23). What is the maximum altitude you can fly without oxygen? (FAR 91.211, GFH 6-4)

For how long? _____

24). When should you go on oxygen? (GFH 1-10,11 *SFM 5-5*)

25). List the following radio frequencies you would use flying gliders from Skylark Field: (SOP)

Multicomm _____ Emergency _____

Local glider operations _____ Other glider operations _____

26). What must you accomplish every 90 days with a CFI-G as a student pilot? (FAR 61.87 (1) 2)

27). Where would you obtain a student pilot's license? (FAR 61.85)

28). What must you have in your possession every time you fly? (circle the correct answer) (FAR)

a). Logbook, government issued photo ID, student license

b). Logbook, student pilot's license

c). Student pilot's license, government issued photo ID

29). As a student pilot, may you carry a passenger? (FAR 61.89) _____

30). May you fly as soon as 6 hours after consuming alcohol? (FAR 91.17) _____

How long must you wait? _____

31). The final responsibility for determining whether an aircraft is safe for flight lies with: (FAR 91.37)

a). A certified inspector

b). The aircraft owner

c). The pilot in command

32). You are flying the ridge and have over flown the lift and wish to turn around. Which way should you turn and why? (GFH 10-9,10, *SFM 15-5*)

33). You are flying the ridge and are overtaking another glider. FAR's require you to pass always on the right. Should you do so? Why or why not? (GFH 10-9,10, *SFM 15-5*)

34). You enter a thermal above another glider who is turning left. Which way should you turn? (GB 86)

a). Left, because the lowest glider establishes direction

b). Either way, because the highest glider establishes direction

c). Left, because the first glider in the thermal establishes direction

- 35). When landing in a crosswind, which wing should you have lowered? (GB 132)
- a). neither, you should land normally
 - b). the windward wing
 - c). the leeward wing
- 36). When should you announce your landings at Skylark on the radio? (SOP)
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- 37). On what frequency? (SOP)
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- 38). In the glider you are going to solo, describe the rule of thumb for approach speed with a 10 mph headwind? (GB 109, Aircraft Manual, *SFM 14-12*)
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- 39). The primary function of the rudder is to: (GB 21)
- a). Turn the glider
 - b). Counteract aileron drag
 - c). Assist in recovery from stalls and spins
 - d). Perform side slips
- 40). The primary tool in controlling angle of attack of the wing is: (GB 14)
- a). Airspeed
 - b). Relative Airflow
 - c). Elevator
 - d). Dive Brakes
- 41). What should you do if you see slack in the tow line behind the cockpit? (GB 90, CFI-G)
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- 42). Over half of all aircraft accidents can be attributed to stalls. Regarding stalls, you know that: (GB 70)
- a). A stall is a function of angle of attack
 - b). An aircraft can only stall below minimum sink speed
 - c). An aircraft can only stall if the nose is above the horizon

43). What is wind gradient? (CFI-G)

44). While flying, you notice a large twin engine aircraft approaching from your right on an apparent collision course. You know to: (FAR 91.113)

- a). You have the right of way, continue on your course
- b). Give right of way to the twin, as he is on your right
- c). Maneuver in any way you think is necessary to avoid a collision

45). In the question above, who legally has the right of way? (FAR 91.113)

46). When two aircraft are approaching head on: (FAR 91.113)

- a). The smaller or non powered category has the right of way
- b). Each aircraft should alter it's course to the right
- c). The larger has the right of way

47). You are on the base leg of your approach to landing on 11R. You notice a power plane on final for 11R. What should you do? (FAR 91.113)

- a). Nothing, continue your approach as a glider has right of way over powered aircraft
- b). An aircraft on final has right of way, turn out over the lake and follow him in
- c). An aircraft on final has right of way, turn in towards another landing area at Skylark

48). What is the airspace at Skylark Field? _____ (Los Angeles Sectional Chart)

To what altitude? _____ (Los Angeles Sectional Chart)

49). As a student pilot, what are the visibility restrictions in the above airspace? (FAR 61.89)

_____ statute mile(s)

50). You're going to land at Perris Airport. What is the maximum altitude you can approach Perris at? (Los Angeles Sectional Chart)

_____ feet MSL

Why? _____

51). What are the basic VFR minimums for controlled airspace (below 10,000 feet)? (FAR 91.155, *SFM* 7-4,5)

Visibility _____ statute miles, cloud clearance _____ feet below, _____ feet above and

_____ feet horizontally

- 52). What are the basic VFR minimums for controlled airspace (above 10,000 feet)? (FAR 91.155, *SFM 7-4,5*)

Visibility _____ statute miles, cloud clearance _____ feet below, _____ feet above and _____ feet horizontally

- 53). What is the *minimum* clearance you must maintain from a building or person? (FAR 91.121)

_____ feet

- 54). What number would you call to obtain the soaring forecast for Lake Elsinore? (GFH 9-25, CFI-G, *SFM 4-18*)

- 55). Congratulations! You've finished the pre-solo written exam. Are you ready to solo?

_____!