Pre-Solo Written Exam

Directions: Use any available resource to complete this exam (FAR/AIM, A/FD, Sectional, etc…). Answers may be written on this sheet or another separate sheet of paper.

General Rules

1. What personal documents and endorsements are you required to have before you fly solo?
2. As a student pilot, what are your limitations concerning visibility and flight above clouds?
3. Who has the final authority and responsibility for the operation of the aircraft when you are flying solo?
4. What preflight action concerning the airport and aircraft performance is specified in the regulations for a local flight?
5. You may not fly as pilot of a civil aircraft within ____ hours after consumption of any alcoholic beverage, or while you have a BAC greater than or equal to ____%.
6. What are the requirements pertaining to the use of safety belts and shoulder harnesses?
7. How much fuel must you have in reserve on a VFR day cross country flight?
8. A mode C transponder is required at all times above ______ ft MSL, excluding that airspace at and below ______ ft AGL.
9. What aircraft certificates and documents must be on board at all times?
   - A
   - R
   - O
   - W
10. Who has the right of way when two aircraft are on final approach to land at the same time?
11. What action do you need to take if you are overtaking another aircraft and what aircraft has the right-of-way?
12. What should you do if you are flying on a head-on collision course with another aircraft?
13. If another single-engine aircraft is converging from the right, who has the right-of-way?
14. Except when necessary for takeoffs and landings, what are the minimum safe altitudes when flying over congested, non-congested, and sparsely populated areas? What is the minimum safe altitude in any case?
15. If an altimeter setting is not available at an airport, how should you set your altimeter?
16. What altitudes should you use when operating under VFR in a level cruising flight at more than 3,000 feet AGL?
17. When practicing steep turns, stalls, and maneuvering during slow flight, the entry altitude must allow a recovery to be completed no lower than ______ ft AGL.
18. When should you execute a go-around?
19. What general steps should you follow in the event of an engine failure?
**Aircraft Characteristics and Limitations**

1. List the minimum equipment and instruments that must be working properly in your aircraft for day VFR flight.
2. Fill in the table:

<table>
<thead>
<tr>
<th>$V_{\text{Speed}}$</th>
<th>Definition</th>
<th>Speed (Knots)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{SO}$</td>
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<tr>
<td>$V_{SI}$</td>
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<td>$V_{X}$</td>
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<td>$V_{A}$</td>
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<td>$V_{NO}$</td>
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<td>$V_{NE}$</td>
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</tbody>
</table>

3. What is the best glide speed for your training aircraft?
4. What is the maximum allowable flap setting for takeoff in your training aircraft?
5. Total useable fuel is ____ gallons. Average fuel burn is ____ gallons/hr (use 15°C above standard and 2000’).
6. What grades of fuel can be safely used in your aircraft?
7. The maximum oil capacity is ____ quarts, and the minimum is ____ quarts.
8. The maximum demonstrated crosswind component for your aircraft is ____ kts.
9. When should you use carburetor heat/alternate air? What are the indications of induction icing?
10. What is the takeoff and landing distance over a 50-foot obstacle at your W29? Assume maximum certified takeoff weight, 80°F, calm winds, and an altimeter setting of 29.52”.

Name: ________________________________
**Airport and Local Airspace**

1. What direction are turns and the traffic pattern altitude for W29 and KESN?
2. What are the recommended entry and exit procedures for the traffic pattern?
3. What radio calls are recommended at W29? What frequencies are used at W29?
4. What radio procedures are required at KESN? What frequencies are used at KESN?
5. What is the standard direction of turns in a traffic pattern? Give two ways to determine the direction of turns at an airport?
6. What are the frequencies at W29?
7. How can you determine if a runway is closed?
8. What are the typical dimensions and what are the requirements to operate in Class D airspace?
9. What are the VFR visibility and cloud clearance requirements to operate in Class D airspace?
10. Describe the typical dimensions of Class C airspace and any operational requirements to operate in Class C airspace (equipment, radio proc., etc.).
11. What are the VFR visibility and cloud clearance requirements to operate in Class C airspace?
12. You are flying N12345. The controller says, “N12345, standby.” Are you now allowed to enter this airspace with out further instructions?
13. What is the maximum speed permitted for aircraft below 10,000 ft MSL? Within Class B airspace? In a VFR corridor Class B airspace?
14. You receive ATC instructions that you feel may compromise safety or will cause you to violate an FAR. What should you do?
15. ATC Light Signals: Fill in the chart below

<table>
<thead>
<tr>
<th>Signal</th>
<th>Ground</th>
<th>In-Flight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady Green</td>
<td></td>
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<tr>
<td>Flashing Green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steady Red</td>
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<tr>
<td>Flashing Red</td>
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<td></td>
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<tr>
<td>Alternating Red and Green</td>
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<td></td>
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<tr>
<td>Flashing White</td>
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</tbody>
</table>

16. In addition to the equipment requirements and a student pilot certificate, what other requirements must be completed before you, as a student pilot, may fly solo in Class B airspace?
17. Explain the general shape of Class B Airspace. (Draw a picture)
18. You are flying N12345. You have called ATC just prior to entering Class B airspace, the controller tells you to, “N12345, Squawk 2466 and Ident.” Are you allowed to continue into Class B airspace?
19. On a sectional chart, what does a dashed magenta line around an airport indicate?
20. What is Special VFR, Can a student pilot request Special VFR?
21. Where does the SFRA exist in close proximity to W29? Can you fly into the SFRA without prior contact to ATC?
22. What basic rules and procedures must be followed is wishing to operate within the SFRA?
23. How do you obtain a discrete squawk code for operations within the SFRA? What transponder code should never be used in the SFRA?

**Name: ___________________________________________**