

References: Pilot's Operating Handbook for the 1979 Cessna R182 Model; *Flying Magazine* Article "Cessna 182 Safety Report;" RAFA SOP; and Refueling Instructions found in the airplane flyaway logbook.

1. While the minimum oil quantity to operate this aircraft is listed as 5 qts. in the POH, RAFA's policy is to maintain a minimum of 6 qts. The oil sump can hold a maximum of ___ quarts, which are required for flights of 3 hours or more.
 - a. 4
 - b. 12
 - c. 10
 - d. 8

2. The engine in the R182 is a:
 - a. Lycoming IO-520J 250 HP
 - b. Continental O450T 330 HP
 - c. Lycoming O-540-J3C5D 235 HP
 - d. Lycoming O-360A 180 HP

3. Normal takeoff procedure is to raise the nose wheel at ___ KIAS and climb at ___ KIAS with flaps up:
 - a. 65 - 95
 - b. 50 - 80
 - c. 55 - 80
 - d. 75 - 95

4. The flap setting for a maximum performance (short-field) takeoff is ___ degrees.
 - a. 30
 - b. 10
 - c. 35
 - d. 20

5. Normal takeoffs are performed at full throttle and 2400 RPM. Whenever possible, reduce power to normal enroute climb of ___ inches of manifold pressure and ___ RPM as soon as practical to reduce engine wear.
 - a. 20 / 2200
 - b. 22 / 2500
 - c. 23 / 2350
 - d. 23 / 2400

6. Standard ramp fuel load before parking the R182 at the RAFA is "Fill both tanks to the NECK TABS." This provides ___ gallons of fuel in each tank of the aircraft.
 - a. 34.5
 - b. 88
 - c. 40
 - d. 22.5

7. The best rate of climb (V_Y) KIAS for this aircraft at sea level is:
- a. 78 b. 66 c. 88 d. 70
8. The best angle of climb (V_X) obstacle-clearance speed with 0° flaps and with 20° flaps is _____ / _____ KIAS.
- a. 78 / 80 b. 64 / 55 c. 70 / 80 d. 69 / 75
9. The "Before Landing" Checklist requires the pilot to set the propeller at _____ RPM.
- a. 2600 b. 2500 c. 2450 d. high RPM
10. Final approach speed is _____ to _____ KIAS with flaps extended.
- a. 65 - 75 b. 70 - 85 c. 70 - 80 d. 60 - 90
11. After leveling off at cruise altitude from a climb, the pilot should adjust power and RPM by:
- a. Readjusting the mixture c. Reducing RPM then power
b. Reducing power then RPM d. Closing cowl flaps
12. The maximum / usable fuel capacity is:
- a. 88 / 86 gals b. 85 / 75 gals c. 92 / 88 gals d. 70 / 65 gallons
13. Fuel from both tanks flows by gravity to a selector valve. This valve should be in the BOTH position:
- a. At tank levels below $\frac{1}{4}$ empty c. a., b., and d.
b. When not in level flight d. For takeoff, climb, and landing

14. While the POH states the battery is in the aft section of the airplane, R182s with serial numbers under 1314 (736ZX) have the battery located in the engine compartment on the right side of the firewall. Aircraft 736ZX is equipped with a ____ volt battery fed by a ____ volt engine-driven alternator.
- a. 24 / 12 b. 12 / 24 c. 24 / 60 d. 24 / 28
15. To determine proper alternator and voltage regulator operation prior to takeoff, you may load the electrical system by operating the _____. If the ammeter remains within _____ of zero, the system is operating properly.
- a. navigation lights / two inches c. heater blower / two dots
b. prop control / two needle widths d. landing light(s) / one needle width
16. The maximum demonstrated crosswind velocity for takeoff or landing is ____ knots.
- a. 18 b. 12 c. 15 d. 20
17. The landing gear is held in the up position by hydraulic pressure. If the landing-gear pump is audible for over a minute, you should:
- a. Use emergency hand pump c. Lower the gear and have it checked after a precautionary landing
b. Pull circuit breaker until needed d. b. and c.
18. The engine is tightly cowled to control its cooling. Cowl flaps should be adjusted to maintain the cylinder-head temperature at about _____ of the green arc.
- a. 2/3 b. the top c. one-half d. the bottom
19. When is it appropriate to use minimum carburetor heat on this aircraft?
- a. During ground warm-up
b. When increased engine power is necessary
c. When providing unfiltered air for cruise
d. During takeoff, climb and cruise for smooth operation

20. Maneuvering speed (V_A), the maximum speed where abrupt control movements may be used, is:
- a. 105 KIAS @ 3100 lbs.
 - b. 100 KIAS @ 3100 lbs.
 - c. 145 KIAS @ 3100 lbs.
 - d. 112 KIAS @ 3100 lbs.
21. The first 10° of flaps may be lowered when the airspeed is below _____ KIAS.
- a. 63
 - b. 140
 - c. 110
 - d. 85
22. A flap setting greater than 10° must not be selected until the airspeed is below _____ KIAS.
- a. 85
 - b. 95
 - c. 125
 - d. 90
23. The maximum certificated weight for takeoff and landing is:
- a. 2950 lbs.
 - b. 2900 lbs.
 - c. 3100 lbs.
 - d. 2775 lbs.
24. Maintenance is being done on runway 35 at Redstone. You are to depart the runway at a pressure altitude of 1000 feet, then climb over a 50-foot crane positioned in the construction area. The airplane weighs 3100 lbs at takeoff, the wind is calm, and the temperature is 30° C. What is the ground roll and total distance to clear the crane.
- a. 785 / 1490
 - b. 910 / 1745
 - c. 995 / 1915
 - d. 800 / 1545
25. According to the *Flying Magazine* Safety Report, unless required for an actual short-field landing with no passengers in the back seats, flaps should be limited to _____ degrees. With 40° flaps, airspeed bleeds off _____ and a landing on the nose wheel is _____.
- a. Use no flaps / slowly / likely
 - b. 10 degrees / slowly / assured
 - c. 30 degrees / moderately / not possible
 - d. 20 degrees / rapidly / more likely

26. Compute the center of gravity (CG) for this airplane with fuel shown, plus a 170-lb. pilot and a 230-lb. passenger in the front seats. Use the example empty weight and arm values below.

	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Airplane	1808.0	34.29	61996.32
Fuel (50 gallons)	_____	46.6	_____
Pilot & passenger	_____	_____	_____
Totals	_____		_____

CG is _____ inches aft of datum

- a. 36.19, within CG limits
- b. 32.50, outside CG limits
- c. 41.25, within CG limits
- d. 49.21, outside CG limits

27. After takeoff and reaching a point over the runway where a wheels-down, forced landing becomes impractical, what should you do before retracting the gear?

- a. check for sufficient vacuum pressure
- b. retract any flaps
- c. check for traffic
- d. apply brakes to stop wheel rotation

28. Maximum glide airspeed at 3100 lbs. is _____ KIAS.

- a. 96
- b. 112
- c. 72
- d. 80

29. Is N736ZX approved for intentional spins?

- a. Yes
- b. No

30. Cruising at 6000 feet with mixture properly leaned and cowl flaps closed, 2400 RPM, 3° C, and 75% power, a pilot can expect a true airspeed and fuel consumption of:

- a. 154 KTAS / 13.6 gph
- b. 149 KTAS / 11.4 gph
- c. 154 KTAS / 12.4 gph
- d. 144 KTAS / 10.7 gph

31. If a landing gear up or down light appears inoperative, you should:

- a. "Press to test" the light function
- b. Rotate the light housing to test for dimming shutters
- c. Check for a burned out bulb by replacing it with the working bulb
- d. All of the above

32. The auxiliary fuel pump should be turned on when:

- a. Fuel pressure drops to 0.5 PSI
- b. OAT drops below 5° C
- c. During slow flight
- d. During takeoff and landing

33. The maximum landing-gear extended speed (V_{LE}) and maximum landing-gear operating speed (V_{LO}) in 736ZX are:

- a. 175 KIAS
- b. 140 KIAS
- c. 125 KIAS
- d. Within the green arc