

GACE flying Club Systems Review, 2012  
N5312S

Date: \_\_\_\_\_

Name: \_\_\_\_\_ GACE# \_\_\_\_\_ Score: \_\_\_\_\_

Checked by: \_\_\_\_\_ CFI# \_\_\_\_\_ Date: \_\_\_\_\_

( Instructions: Fill in the blank, circle the appropriate letter or match the correct answers as indicated. All pilots should answer questions 1 to 30. List Section and page number)  
( Materials needed: C172S POH)

- 1) Fuel limitation(s) listed for this aircraft are: True or False
  - (a) take off and land with the fuel selector valve handle in the BOTH position
  - (b) Operation on either LEFT or RIGHT tank limited to level flight only.
  - (c) Fuel remaining in the tank after the fuel quantity indicator reads 0 (red line) cannot be safely used in flight.
  - (d) a, b, c are all true.(Section: \_\_\_\_\_ page: \_\_\_\_\_)
- 2) Maximum slip or skid duration with one tank dry: \_\_\_\_\_ hrs. mins, sec  
(Section: \_\_\_\_\_ page: \_\_\_\_\_)
- 3) With \_\_\_\_\_ tank or less, prolonged uncoordinated flight is prohibited when operating on either left or right tank.  
(Section: \_\_\_\_\_ page: \_\_\_\_\_)
- 4) The ammeter shows excessive rate of charge (full scale deflection), you switch off the alternator, what may occur?
  - (a) you may continue the flight.
  - (b) you may use all of the electrical system on battery power.
  - (c) compass deviations of as much as 25 degrees may occur.(Section: \_\_\_\_\_ page: \_\_\_\_\_)
- 5) You are taxiing 12S during a low RPM condition with an electrical load; the "VOLT" annunciator light activates, you should,
  - (a) recycle both the battery and alternator on the master switch.
  - (b) recycle the battery only.
  - (c) an over voltage condition has not occurred, increase RPMs.
  - (d) recycle the alternator only.(Section: \_\_\_\_\_ page: \_\_\_\_\_)

6) You experience rough engine operation or loss of power while in flight. You lean the mixture to recommended lean setting for cruising flight, the problem does not clear, you determine if a richer mixture will produce smoother operation. If not, using the BOTH position of the ignition switch and proceed to the nearest airport. This is the same procedure for a magneto malfunction.

- (a) true, if extreme roughness dictates the use of a single ignition position.
  - (b) false, they are unrelated systems, one mechanical and one electrical.
  - (c) true, sudden roughness and misfires occur with both systems.
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

7) During flight, a sudden reduction in indicated fuel flow occurs just before loss of engine power. You should?

- (a) continue the flight, this is a gravity fed fuel system.
  - (b) continue the flight, switching the electric fuel pump ON as necessary.
  - (c) set the auxiliary fuel pump ON to restore engine power.
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

8) Injected fuel engines are susceptible to excessive fuel vapor indications. Which conditions are most likely to be generated?

- (a) operation of high RPMs during taxi.
  - (b) operation at high altitudes.
  - (c) operation at near idle RPM for extended periods of time.
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

9) Indicated fuel flow that is not stable (sudden changes greater than 1 gal/hr) is a sign that fuel vapor may be present in the system. Fuel flow indications that become less stable (increasing changes) may lead to power surges and power loss if not corrected. If in-flight vapor is suspected, smoother engine operation may be increased by:

- (a) land as soon as possible.
  - (b) notify ATC of this event & land as soon as possible.
  - (c) auxiliary pump ON; lean mixture; select another fuel tank and increase airspeed to cool engine.
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

10) If low oil pressure annunciator (OIL PRESS) illuminates and oil temperature remains normal, the pilot should? .

- (a) lean the mixture.
  - (b) the oil sending unit valve may be malfunctioning; continue flight & inspect source of trouble.
  - (c) land at the nearest airport to inspect the source of trouble.
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

11) If a total loss of oil pressure is accompanied by a rise in oil temperature, there is good reason to suspect an engine failure is imminent. You should?

- (a) use only minimum power to reach the desired touchdown spot.
- (b) immediately shut down engine, set up the best glide speed & land as soon as possible.
- (c) perform shut down emergency procedures and land as soon as possible.

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

12) After engine starting and heavy electrical usage at low engine speeds, (extended taxiing) the battery condition will be low enough to accept above normal charging during the initial part of a flight. Electronic components by higher than normal voltage. The over voltage sensor will shut down the alternator at approximately \_\_\_\_\_ volts, amps or watts. (Section: \_\_\_\_\_ page: \_\_\_\_\_)

13) If an over voltage sensor malfunctions, as evidenced by an excessive rate of charge shown on the ammeter, you should:

- (a) the battery and alternator should be turned off, nonessential electrical equipment turned off and flight terminated as soon as possible.
- (b) the battery should be turned off, nonessential electrical equipment turned off and flight terminated as soon as possible.
- (c) the alternator should be turned off, nonessential electrical equipment turned off and flight terminated as soon as possible.

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

14) If the over voltage sensor should shut down the alternator and trip the alternator circuit breaker (ALT FLD), or if the alternator is low, a discharge rate will be shown on the ammeter followed by illumination of the low voltage annunciator (VOLTS). Since this may be a "nuisance" trip out, to reactivate the alternator system

- (a) set both sides of the master switch in the OFF position and then to the ON position.
- (b) set the alternator side of the switch OFF and then to the ON position.
- (c) set the avionics switch to the OFF position, check that the alternator circuit breaker (ALT FLD) is in, set both sides of the master switch OFF and then ON.

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

15) If a bird strike or other incident should damage the windshield in flight to the point of creating an opening, a significant loss in performance may be expected. To minimize this loss, you should:

(a) place an article of clothing in the opening as the airplane is maneuvered for a landing at the nearest airport.

(b) open the side window as the airplane is maneuvered for a landing at the nearest airport.

(c) open both side windows and open the CABIN AIR to equalize the cabin pressure prior to landing at the nearest airport.

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

16) Do not operate this aircraft with less than \_\_\_\_\_ quarts of oil.

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

17) When starting with the battery:

(a) Throttle OPEN, auxiliary fuel pump ON until stable fuel flow is indicated, throttle Open 1/4 INCH.

(b) Mixture SET to FULL RICH until stable fuel flow is indicated, then set to IDLE CUTOFF position.

(c) Throttle ADVANCED smoothly when engine starts.

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

18) True or False. If the engine is warm, continue priming procedure to prevent vapor lock? \_\_\_\_\_

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

19) True or False. If engine floods, turn off auxiliary fuel pump, place mixture to idle cutoff, open throttle 1/2 to full, and motor (crank) engine. When engine starts, set mixture to full rich and close throttle promptly. \_\_\_\_\_

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

20) (Finish the sentence) After major maintenance has been performed, the flight and trim tab controls should be: \_\_\_\_\_

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

- 21) If the airplane has been waxed or polished,
- (a) check the windshield for deep scratches
  - (b) check the fuel vent for obstructions
  - (c) check the static pressure source hole for stoppage

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

22) (Finish the sentence) Outside storage for long periods may result in dust and dirt accumulation on the induction air filter: \_\_\_\_\_

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

23) If any water is detected in the fuel system, the fuel tank quick sump quick drain valves, fuel reservoir quick drain valve should all be thoroughly drained again.

- (a) the wings should be gently rocked
- (b) the tail lowered to the ground to move any further contaminants to the sampling points
- (c) samples should be taken at all quick drain points until all contamination has been removed
- (d) a, b, c, are correct

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

24) (Finish the sentence) ....., if the airplane has been stored outside in windy or gusty areas, or tied down adjacent to taxiing airplanes: \_\_\_\_\_

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

25) True or False. If the shock strut is insufficiently extended, undue landing and taxi loads will be subjected on the airplane structure. \_\_\_\_\_

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

26) In warmer weather, engine compartment temperatures may increase rapidly following engine shutdown.

- (a) the injector nozzle lines remain nearly full
- (b) fuel in the lines will vaporize and escape into the intake manifold
- (c) fuel in the lines will escape into the carburetor and vaporize to the outside air

(Section: \_\_\_\_\_ page: \_\_\_\_\_)

- 27) Hot weather starting procedures
- (a) require priming after 20 to 30 minutes
  - (b) require priming after 30 to 40 minutes
  - (c) require priming after 40 to 60 minutes
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

28) (Finish the sentence) Starting a hot engine is facilitated by advancing the mixture control promptly to: \_\_\_\_\_

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(Section: \_\_\_\_\_ page: \_\_\_\_\_)

- 29) The recommended starter duty cycle allows for the following, ( Fill in all the blanks )
- (a) crank the starter for \_\_\_\_ seconds followed by a \_\_\_\_ second cool down period
  - (b) this cycle can be repeated \_\_\_\_ additional times
  - (c) followed by a \_\_\_\_\_ minute cool down period before resuming cranking
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

- 30) The EGT varies with the
- (a) fuel-air ratio
  - (b) density altitude
  - (c) throttle position and RPM
  - (d) all of the above
- (Section: \_\_\_\_\_ page: \_\_\_\_\_)

End of Test