

Part I Multiple Choice. Select the letter of the answer that best answers the questions.

Note: Questions 1-25 are from the C172N and Questions 26-40 are from the C172-R.

1. What does the ammeter indicate?
 - a. Current flow from the alternator.
 - b. Current flow to/from the battery.
 - c. Total electrical load.
 - d. Total amperage of the electrical system.

2. If the oil gauge does not begin to show pressure within 30 seconds in the summertime and about twice that long in cold weather:
 - a. Continue the flight because the oil pressure indication is not required
 - b. Monitor the oil temperature gauge closely
 - c. Consult the aircraft operations manual
 - d. Stop the engine and investigate because lack of oil pressure could result in serious engine damage

3. The maximum demonstrated crosswind velocity is:
 - a. 10 kt.
 - b. 12 kt.
 - c. 15 kt.
 - d. 17 kt.

4. Short field landing procedures are:
 - a. Flaps 30, maintain 60 KIAS, touchdown main gear first, brake heavily, retract flaps.
 - b. Flaps 40, maintain 60 KIAS, touchdown main wheels first, brake heavily, retract flaps.
 - c. Flaps 40, maintain 61 KIAS, touchdown main wheels first, lower nose wheel gently.
 - d. Any of the above.

5. Balked landing or go-around procedures are:
 - a. Full throttle, carburetor heat cold.
 - b. Wing flaps: 20°.
 - c. Airspeed 55 KIAS; slowly retract flaps after reaching a safe altitude and 60 KIAS.
 - d. All the above.

6. Electrical power malfunctions fall into two categories: EXCESSIVE RATE OF CHARGE, AND INSUFFICIENT RATE OF CHARGE.
 - a. True
 - b. False

7. The best glide speed and configuration is:
 - a. 60 KIAS, flaps up
 - b. 60 KIAS, flaps 10°
 - c. 65 KIAS, flaps up
 - d. 65 KIAS, flaps 10°

8. The emergency landing without engine power speed is:

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- a. 55 KIAS, full flaps; and 65 KIAS, flaps up.
 - b. 60 KIAS, full flaps; and 65 KIAS, flaps up.
 - c. 65 KIAS, full flaps; and 70 KIAS, flaps up.
 - d. 70 KIAS, full flaps; and 65 KIAS, flaps up.
9. When should flaps 10° be used during takeoff:
- a. During normal operations
 - b. During soft field operations
 - c. During short field operations
 - d. All of the above.
10. When pushing the aircraft back into its parking spot the maximum nose gear turning angle is:
- a. 15°
 - b. 30°
 - c. 45°
 - d. 90°
11. The Cessna 172 is equipped with a normally aspirated, direct-drive, air cooled, horizontal opposed, carburetor equipped, four cylinder engine. It develops:
- a. 110 rated BHP at 2550 RPM
 - b. 140 rated BHP at 2750 RPM
 - c. 160 rated BHP at 2700 RPM
 - d. 180 rated BHP at 2700 RPM
12. The total usable fuel capacity with standard tanks is:
- a. 38 gal
 - b. 40 gal
 - c. 42 gal
 - d. 44 gal
13. What should the pilot do to ensure that the aircraft receives the most fuel during refueling?
- a. Place fuel selector to both.
 - b. Place the fuel selector to either right or left tank.
 - c. Place the fuel shutoff valve to off.
 - d. Re-top each tank.
14. Flown in the utility category the following maneuvers may be accomplished when speed is
- a. Chandelles and Lazy Eights - 105 knots
 - b. Steep Turns - 95 knots
 - c. Stalls (except whip stall) and Spins - slow deceleration
 - d. All the above
15. As a normal category aircraft which of the following maneuvers are not authorized?
- a. Chandelles and Lazy Eights

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- b. Steep Turns
 - c. Spins
 - d. All the above
16. The maximum authorized weight in the baggage compartment is:
- a. Baggage Area One 100 lbs
 - b. Baggage Area Two 50 lbs
 - c. Baggage Area One 120 lbs and Baggage Area Two 40 lbs
 - d. Combined Baggage Area One and Two: 120 lbs
17. The top of the green arc is also known as the maneuvering speed at max gross weight (V_A).
- a. True
 - b. False
18. Given the following conditions, can the aircraft takeoff being within both weight and CG limits?

	<u>Weight</u>	<u>Moment</u>
Basic Empty Weight	1457 lbs	56,748
Usable fuel (40 gal)		
Pilot	190 lbs	
Passenger	125 lbs	
Rear passenger	135 lbs	
Rear passenger	160 lbs	
Taxi & engine run-up	-7lbs	

- a. 2140 lbs, 88,976 moment, utility category.
 - b. 2140 lbs, 88,976 moment, normal category.
 - c. 2300 lbs, 100,656 moment, normal category.
 - d. 2400 lbs, 107,956 moment, normal category.
19. Normal engine operating ranges vary with altitude so as not to exceed 75 percent power are:
- a. Sea level 1900-2500 RPM, 4000 ft 1900-2550 RPM, and 8,000 ft 1900-2550 RPM
 - b. Sea level 2100-2450 RPM, 4000 ft 2100-2575 RPM, and 8,000 ft 1900-2700 RPM
 - c. Sea level 2100-2450 RPM, 5000 ft 2100-2350 RPM, and 10,000 ft 2100-2700 RPM
 - d. Sea level 2100-2450 RPM, 5000 ft 2100-2575 RPM, and 10,000 ft 2100-2700 RPM
20. The pitot-static system is composed of a pitot tube under the left wing and:
- a. a static port located on the lower left fuselage.
 - b. Two static ports located on either side of the fuselage.
 - c. a static port located on the lower right fuselage.
 - d. no static port, it is located in the pitot tube under the left wing.
21. Based on Time, Fuel, Distance and Cruise Performance Charts, correct leanintg procedures are:

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- a. Mixture should be leaned for takeoff above 3000 ft for maximum RPM.
 - b. At 75% power or less, the mixture is leaned until the engine RPM peaks and then drops 25-50 RPM.
 - c. If necessary to cruise at higher than 75% power the mixture should not be leaned more than is required to provide peak RPM.
 - d. All the above are correct.
22. When maneuvering on the Aero Club ramp another aircraft is taxiing and you need to do a minimum radius turn, what is the minimum radius?
- a. 17' 5.5"
 - b. 20' 5.5"
 - c. 27' 5.5"
 - d. 30' 5.5"
23. If the outside air temperature is 20°C at a pressure altitude of 2000 feet what is the rate of climb?
- a. 590
 - b. 650
 - c. 705
 - d. 765
24. The engine manufactured for the C172 is Lycoming and they recommend that a minimum oil capacity of what should be used in the O-320?
- a. 4 qt.
 - b. 5 qt.
 - c. 6 qt.
 - d. 7 qt.
25. What type of fuel system does the C172 have?
- a. Fuel-pump
 - b. Gravity Feed
 - c. Inverted
 - d. All of the above

EMERGENCY QUESTIONS - CLOSED BOOK

NOTE: C172N MODEL IS USED UNLESS OTHERWISE STATED.

26. List the emergency checklist steps for an engine failure during takeoff roll.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.

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27. List the emergency checklist steps for an engine failure immediately after takeoff.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.
28. List the emergency checklist steps for an engine failure during flight.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.
29. List the emergency checklist steps for an engine fire in flight.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.
30. List the emergency checklist steps for the following electrical power system malfunction:
Ammeter shows excessive rate of charge with a full scale deflection.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.

NOTE: C172R MODEL IS USED FOR THE FOLLOWING QUESTIONS UNLESS OTHERWISE STATED

31. Fuel Capacity for the 172 R is:
- a. Total 56.0 gallons, usable 53.0 gallons
 - b. Total capacity each tank 28.0 gallons, usable 26.5 gallons
 - c. Total capacity 43.0 gallons usable gallons 40.0
 - d. a & b above

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32. Certificated Maximum Weights for normal category are:
- a. Ramp weight 2407lbs, takeoff weight 2400lbs
 - b. Ramp weight 2457lbs, takeoff weight 2450lbs
 - c. Ramp weight 2307lbs, takeoff weight 2300lbs
 - d. None of the Above
33. Engine Limitations are:
- a. Static RPM range at full throttle of 2065 to 2165 RPM
 - b. Maximum power 180 BHP rating, maximum engine speed 2400 RPM
 - c. Maximum power 160 BPH rating, maximum engine speed 2400 RPM
 - d. a and c above
34. Minimum oil level and recommended level for longer flights are:
- a. 4 quarts minimum, fill to 8 quarts for extended flights
 - b. 5 quarts minimum, fill to 8 quarts for extended flights
 - c. 6 quarts minimum, fill to 8 quarts for extended flights
35. Starting Procedure (with battery) on a cold engine include:
- a. Auxiliary Fuel Pump switch ON, mixture full rich, ignition switch START
 - b. Auxiliary Fuel Pump switch ON, mixture full rich until stable fuel flow is indicated and then set to IDLE CUTOFF, Auxiliary fuel pump OFF, ignition switch START, advance mixture slowly to RICH when the engine starts.
36. During operation at reduced power such as decent and landings, the use of carburetor heat is recommended.
- a. True
 - b. False
37. Recommended Starter Cycle is:
- a. Crank for a Maximum of 30 seconds, then allow to cool down for 30 seconds
 - b. Crank for a maximum of 10 seconds followed by a 20 second cool down
 - c. Crank for a maximum of 10 seconds followed by a 20 second cool down. Repeat this cycle 2 additional times followed by a 10 minute cool down period before resuming cranking
38. Ground operating leaning procedures after starting & the engine is running smoothly are:
- a. Leaning is not recommended for ground operations

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b. Set throttle to 1200 RPM, lean mixture for maximum RPM, then operate the throttle at the recommended 800 to 1000 RPM for ground operations

c. If ground operations/delay is required after the BEFORE TAKEOFF check list is completed, use procedures in b. above

d. b & c above

39. The mixture during climb should be leaned below 3000 ft to obtain smoother operation and at any altitude when cruising or maneuvering at 80% or less power in flight training operations

a. True

b. False

40. Recommended Leaning Procedures is to lean to 50 degrees rich of peak using EGT.

a. True

b. False

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C- 172R Speeds (based on Maximum takeoff weight unless otherwise specified)

FLAP extension Speeds

0 to 10 degree
_____ KIAS

10 to 30 degrees _____ KIAS

Maneuvering Speeds at:

2450# _____ KIAS

2100# _____ KIAS

1600# _____ KIAS

Maximum Glide Speed _____ KIAS

Normal Climb Speed Range _____ KIAS

Short field Takeoff flaps@10 degrees
To clear an obstacle _____ KIAS

Short field approach, flaps@30 degrees _____ KIAS

Normal Approach Speed Range
Flaps up _____ KIAS
Flaps 30 Degrees _____ KIAS

Maximum demonstrated Crosswind Velocity
takeoff and landing _____ KNOTS
Best Rate of Climb @ Sea level _____ KIAS
Best Angle of Climb @ Sea level _____ KIAS

