

USAF Aero Club Aircraft Test

CESSNA-172RG

Provide your answers on AF Form 1584C (Knowledge Exam Record) located on last two pages.

1. The engine is a Lycoming IO-360, 180 HP. What is the maximum continuous RPM?
2. (True/False) - This aircraft has two main fuel tanks and two auxiliary fuel tanks.
3. Which total fuel capacities are correct for N9390B?
 - a. 50 mains and 15 auxiliary
 - b. 66 mains and 24 auxiliary
 - c. 72 mains and 30 auxiliary
4. (True/False) - The grade of oil for summer is 50 weight and winter 30 weight.
5. (True/False) - The minimum operating oil level is 5 quarts and the maximum level is 8 quarts.
6. This aircraft has a constant speed propeller and the first indication of carburetor ice is
 - a. loss of RPM.
 - b. drop in Manifold pressure.
 - c. both a and b.
7. In flight, a discharging ammeter means the electrical load is exceeding the output of the
 - a. battery
 - b. alternator
 - c. battery charger
8. (True/False) - The alternate static source is located in the engine compartment.
9. (True/False) - The "Go Around" procedures for this complex aircraft is full power, carb heat hot and flaps to 5 degrees.
10. What is the best angle-of-climb speed?
11. What is the best rate-of-climb speed?

12. If during takeoff (500'), the engine driven fuel pump fails, you should
- turn on the auxiliary fuel pump.
 - switch to the other fuel tank.
 - both a and b.
13. (True/False) - The primary purpose of the auxiliary fuel pump is to prime the engine prior to start.
14. (True/False) - The auxiliary fuel pump should be switched on if the fuel pressure drops below 0.5 psi.
15. (True/False) - If a fuel tank quantity is completely exhausted in flight, you should switch to the outboard tanks?
16. (True/False) - Transferring fuel from the outboard tanks to the inboard tanks can be done at any time except when landing.
17. The landing gear unsafe indications are
- no gear light with shutter open
 - gear warning horn
 - both a and b
18. (True/False) - Landing gear extension and retraction is accomplished by the electrically driven hydraulic power pack.
19. (True/False) - The gear warning horn will only sound with the landing gear selector up and flaps extended to 10 degrees.
20. (True/False) - After takeoff, prior to retracting the landing gear, brakes should be applied to prevent tire from rubbing on retraction
21. (True/False) - A safety (squat) switch prevents inadvertent gear retraction on the ground.
22. (True/False) - The squat switch is located on the left main landing gear.
23. (True/False) - On your preflight, the squat switch function should be checked by putting the gear selector switch in the up position.
24. (True/False) - Gear retraction is possible using the hand pump.
25. (True/False) - When the landing gear retracts, a moment change occurs.
26. (True/False) - The reason to cycle the prop during the run-up is to provide warm oil into the propeller hub so the governor will maintain speed and not hunt.

27. (True/False) - Oil for controlling the prop comes from an independent oil reservoir.

28. If all oil is lost , the prop would go to a

- a. low pitch (high rpm)
- b. high pitch (low rpm)
- c. feather

29. (True/False) - With the pitot heat switch 'ON', the stall warning system is also heated.

30. (True/False) - Normal and short field takeoff procedures recommend 10 degrees of flaps, at maximum gross weight.

(For answers 31 and 32) Compute the takeoff distance at maximum gross weight under the following conditions:

Sea level
0 degrees C.
20" obstacle
Tailwind – 8 kts

31. What is the ground roll?

32. To clear 50 foot obstacle

33. What is the landing distance (ground roll) under the following conditions?

PA 1000'
20 degrees C.
Runway - dry
Headwind - 10 kts

(For answers 34 thru 39) Compute the power settings, true airspeed, fuel consumption, range and endurance for the following conditions.

70% Power
8000 PA
62 Gallons of usable fuel with 45 minute reserve
Standard Temperature.

34. RPM?

35. Manifold Pressure?

36. TAS?

37. GPH?

38. Range, nm?

39. Endurance, hours?

40. Find the C.G. the following weight and balance

Empty Weight.....	1711 lbs.
Empty Moment.....	65200
Maximum Takeoff Weight.....	2670 lbs.
Pilot & Front Seat Passenger.....	390 lbs.
Rear Passengers.....	310 lbs
Baggage Area "1".....	75 lbs.
Usable Fuel.....	63 lbs

USAF AERO CLUB KNOWLEDGE EXAM RECORD

Name: _____

Date Taken: _____

Type Exam: Standardization Instrument Make & Model 172RG Recurrency
 Initial Solo Solo Cross Country Other: _____

Raw Score (%): _____

Date Corrected to 100%: _____

I certify all items were thoroughly debriefed and all questions answered

Pilot's Signature

Instructor's Signature

Pilot's Signature					Instructor's Signature						
T	F	(A)	(B)	(C)	(D)	T	F	(A)	(B)	(C)	(D)
1.	(A)	(B)	(C)	(D)		26.	(A)	(B)	(C)	(D)	
2.	(A)	(B)	(C)	(D)		27.	(A)	(B)	(C)	(D)	
3.	(A)	(B)	(C)	(D)		28.	(A)	(B)	(C)	(D)	
4.	(A)	(B)	(C)	(D)		29.	(A)	(B)	(C)	(D)	
5.	(A)	(B)	(C)	(D)		30.	(A)	(B)	(C)	(D)	
6.	(A)	(B)	(C)	(D)		31.	(A)	(B)	(C)	(D)	
7.	(A)	(B)	(C)	(D)		32.	(A)	(B)	(C)	(D)	
8.	(A)	(B)	(C)	(D)		33.	(A)	(B)	(C)	(D)	
9.	(A)	(B)	(C)	(D)		34.	(A)	(B)	(C)	(D)	
10.	(A)	(B)	(C)	(D)		35.	(A)	(B)	(C)	(D)	
11.	(A)	(B)	(C)	(D)		36.	(A)	(B)	(C)	(D)	
12.	(A)	(B)	(C)	(D)		37.	(A)	(B)	(C)	(D)	
13.	(A)	(B)	(C)	(D)		38.	(A)	(B)	(C)	(D)	
14.	(A)	(B)	(C)	(D)		39.	(A)	(B)	(C)	(D)	
15.	(A)	(B)	(C)	(D)		40.	(A)	(B)	(C)	(D)	
16.	(A)	(B)	(C)	(D)		41.	(A)	(B)	(C)	(D)	
17.	(A)	(B)	(C)	(D)		42.	(A)	(B)	(C)	(D)	
18.	(A)	(B)	(C)	(D)		43.	(A)	(B)	(C)	(D)	
19.	(A)	(B)	(C)	(D)		44.	(A)	(B)	(C)	(D)	
20.	(A)	(B)	(C)	(D)		45.	(A)	(B)	(C)	(D)	
21.	(A)	(B)	(C)	(D)		46.	(A)	(B)	(C)	(D)	
22.	(A)	(B)	(C)	(D)		47.	(A)	(B)	(C)	(D)	
23.	(A)	(B)	(C)	(D)		48.	(A)	(B)	(C)	(D)	
24.	(A)	(B)	(C)	(D)		49.	(A)	(B)	(C)	(D)	
25.	(A)	(B)	(C)	(D)		50.	(A)	(B)	(C)	(D)	

CLOSED BOOK EXAM

Write the Emergency Action Procedures for the following:

Engine Fire During Start

1. _____
2. _____
3. _____
4. _____
5. _____

Engine Fire In Flight

1. _____
2. _____
3. _____
4. _____
5. _____

Engine Failure In Flight (Cruise)

1. _____
2. _____
3. _____
4. _____
5. _____

Emergency Approach and Landing

1. _____
2. _____
3. _____
4. _____
5. _____

Fill in all the applicable blanks.

1. V_A _____ _____ Lbs
2. V_A _____ _____ Lbs
3. V_A _____ _____ Lbs
4. V_{FE} _____ (First Extension Increment)
5. V_{LO} _____ Retraction (Retractable Gear Aircraft Only)
6. V_{LO} _____ Extension (Retractable Gear Aircraft Only)
7. Best Glide Speed @ Maximum Gross Weight _____