

KBM Flight Training

Cessna 172M

Type Exam

Pre-Solo Knowledge Test

Student: _____

Date assigned: _____

Open Book References:

- 1976 POH for 172M

I. Aircraft

1. List the airspeeds and their definitions for C172M at gross weight:

	<u>KIAS</u>	<u>Instrument Indication</u>	<u>Description</u>
V _{SO}			
V _S			
V _R			
V _X			
V _Y			
V _{FE}			
V _A			
V _{NO}			
V _{NE}			

2. Calculate the Gross Weight and Centre of Gravity for the 172M.

	Weight (lbs) X	Arm (inches) =	Moment (lbs inches)
Basic Empty Weight	1489	-	57,302.1
Front Seats	360	37.0	
Back Seats	20	73.0	
Baggage A	8.1	95.0	
Baggage B	-	123.0	
Fuel (24 US GAL)		47.8	
Gross Weight			

W&B Data for test purposes only, Refer to appropriate documentation for real flight planning

3. Is the aircraft in question 2 in the utility category?
 - a. Yes.
 - b. No, the aircraft is too heavy.
 - c. No, the aircraft CG is not within the utility range.
 - d. No, the baggage areas are not empty.

4. Where can you find the official and valid basic empty weight for the aircraft?
 - a. Journey Log
 - b. POH
 - c. Ask the instructor
 - d. Weight and balance form in the documents bag

5. What type of propeller does this aircraft use?
 - a. Constant speed
 - b. Fixed pitch
 - c. Adjustable pitch

6. The weight limitation for baggage area 1 is _____, baggage area 2 is _____, the combined limit is _____
 - a. 50/100/120
 - b. 100/50/120
 - c. 120/50/120
 - d. 120/120/120

7. The maximum certified takeoff and landing weight in the normal category is _____, and the utility category is _____.
 - a. 2500/2000
 - b. 2300/2000
 - c. 2300/2300
 - d. 2000/2000

8. What is the limiting angle of bank when the aircraft is operated in the normal category?
 - a. 30°
 - b. 45°
 - c. 60°
 - d. 90°

9. The 172M C-GKJJ has long range fuel tanks that can hold a total of _____ US Gallons, and _____ US Gal is useable in flight.
 - a. 48/52
 - b. 21/42
 - c. 52/48
 - d. 42/21

10. What type of engine is in the C172M?

11. This engine produces maximum power of _____ hp, at _____ rpm
- 150/2700
 - 90/2300
 - 275/2575
 - 300/2700
12. On a standard temperature day, the fuel consumption rate with 2400RPM at 4000 feet is published at _____ gal per hour.
- 7.9 gal/hr
 - 7.2 gal/hr
 - 6.9 gal/hr
 - 6.4 gal/hr
13. What fuel burn should be used when planning for a long cross-country at 130% of planned fuel burn.
- 6.5 gal/hr
 - 8.0 gal/hr
 - 10.0 gal/hr
14. How should fuel quantity be determined before flight?
- Refer to the fuel gauges
 - Use a dipstick in each fuel tank, then use the appropriate conversion to determine gallons
 - Refer to the fuel gauges, dip the fuel tanks, and use the conversion chart to determine gallons. Then use a conservative fuel burn to determine total endurance.
15. The static RPM is the max RPM the pilot should expect when full power is applied to a stationary aircraft, and is _____?
- 2000 RPM
 - 2000 – 2500 RPM
 - 2700 RPM
 - 2300-2420 RPM
16. The engine winter fronts should be removed for temperatures warmer than:
- 7°C
 - 7°C
 - 0°C
 - 10°C
17. What is the max flap angle setting?
- 30°
 - 32°
 - 40°
 - 45°

18. Best glide at max gross weight and flaps up is ____ kts.
- 85
 - 65
 - 60
 - 70
19. What is the Gross weight V_{REF} for the C172? ($1.3 V_{SO} KCAS \times \sqrt{\frac{\text{landing weight}}{\text{Gross weight}}}$)
- 55 KIAS
 - 59 KIAS
 - 53 KCAS
 - 40 MPH
20. What type of oil is used in KJJ unless otherwise advised by maintenance?
- Phillips XC20w50
 - Aeroshell 15w50
 - Phillips XC25w60
 - Phillips Type M 20w50
21. The oil capacity of this plane is 8 quarts, however it is routinely flown with 6 quarts. At what point shall the oil be filled with an additional quart?
- 4
 - 5
 - 6
 - 7
22. How long is takeoff power permitted to be used at one time?
- 0+02
 - Unlimited
 - 0+10
 - 0+05
23. What is the minimum and maximum oil temperature in flight?
- 100°C/245°F
 - 130°C/266°F
 - 245°C/473°F
 - 150°C/302°F
24. Intentional spins with flaps extended are:
- Allowed
 - Prohibited
 - Encouraged
 - Discouraged
25. When securing the fuel caps, and during a walkaround, pilots must be vigilant of the vented type fuel caps, and ensure the cap vents are unobstructed.
- True
 - False

26. Describe the process of draining fuel to check for contamination:

27. The gyro air system powers instruments using:

- a. Vacuum
- b. DC power
- c. Hydraulic pressure
- d. Pressurized air

28. Describe your downwind check flow:

29. Under what condition can the windows be open in flight?

- a. When it is hot in the cabin.
- b. As long as the aircraft is operated below V_{NE} .
- c. If a passenger requests it.

30. Redline oil pressures are:

- a. 25/100
- b. 10/100
- c. 10/90
- d. 30/80

31. The service ceiling for the C172M is:

- a. 12,500'
- b. 13,100'
- c. 15,000'
- d. 10,300'

32. During cold winter temperatures, the oil temperature gauge may not register before takeoff. How can you determine the engine is sufficiently warm to take off?

- a. You can not take-off due to not meeting the minimum oil temperature in flight.
- b. After a suitable warm-up period (5 min at 1000rpm), accelerate the engine several times to a higher engine RPM. If the engine accelerates smoothly and the oil pressure remains normal and steady, the airplane is ready for takeoff
- c. During your pre-flight, you made sure that the engine was preheated, touched the crankcase by hand to ensure warmth, and verified the viscosity of the oil was not too low to prevent starting
- d. B and C

33. What is the carburetor caution OAT range on a carb equipped C172?
- 15C to 10C
 - 18C to 5C
 - 15C to 5C
 - 12C to 0C
34. Which fuel selector detent should be selected during fueling of a C172?
- Both
 - Off
 - Left or Right
35. In order to establish the fuel flows that are published in the cruise performance chart, mixture leaning should be accomplished using the following procedure
- Lean to peak RPM
 - Lean for 50 RPM lean of peak RPM
 - Lean until engine roughness, then enrichen slightly for smooth engine operation.
 - Leaning should only be performed above 3000' ASL.
36. Use of partial carb heat:
- Can be used to get rid of a little bit of carb ice.
 - Is useful when trying to warm up the cabin.
 - Should not be used without a carburetor temperature gauge because this can create more ice.
 - Can be used to assist engine smoothness when running very lean mixture settings.

This type exam has been completed and corrected to 100% with a KBM flight instructor:

Trainee - print _____

Signature _____

Date: _____

This test has been reviewed and corrected to 100%

Trainer – print _____

Signature _____

Date: _____