

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 <sub>SO</sub>			
V <sub>S</sub>			
V <sub>R</sub>			
V <sub>X</sub>			
V <sub>Y</sub>			
V <sub>FE</sub>			
V <sub>A</sub>			
V <sub>NO</sub>			
V <sub>NE</sub>			

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: \_\_\_\_\_