KBM Flight Training

Cessna 150M
Type Exam

Pre-Solo Knowledge Test

Student: _____ Date assigned: _____

Open Book References:

- 1976 POH for C150M

I. Aircraft

1. List the airspeeds and their definitions for C150M at gross weight:

	KIAS	Instrument Indication	Description
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 C150M.

	Weight (lbs) X	Arm (inches) =	Moment (lbs inches)
Basic Empty Weight	1124.75	32.51	36566.6
Front Seats	360	39.0	
Baggage Area 1	10	84.0	
Baggage Area 2	10	94.0	
Fuel (22.5 US GAL)		42.2	
Gross Weight			

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

3. Is the aircraft in question 2 within the weight and balance limitations?
    a. Yes.
    b. No, the aircraft is too heavy.
    c. No, the aircraft CG is not within limits.
    d. No, the baggage areas are too heavy.

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. 40/100/120
    b. 100/40/120
    c. 120/40/120
    d. 120/120/120

7. The maximum certified takeoff and landing weight is _____.
    a. 1000
    b. 1600
    c. 1800
    d. 2000

8. The 150M C-GDTH has standard range fuel tanks that can hold a per wing total of ____ US Gallons, and _____US Gal is useable in flight.
    a. 13/11.25
    b. 52/26
    c. 26/22.5
    d. 26/26

9. What type of engine is in the C150M?

    _____

10. This engine produces maximum power of _____hp, at _____rpm
    a. 100/2750
    b. 90/2300
    c. 275/2575
    d. 300/2700

11. On a standard temperature and pressure day, the fuel consumption rate with 2400RPM at 4000 feet is published at ____ gal per hour.
    a. 4.4 gal/hr
    b. 4.1 gal/hr
    c. 3.9 gal/hr
    d. 4.3 gal/hr

12. What fuel burn should be used when planning for a long cross-country at 130% of planned fuel burn (use numbers from question 11).
    a. 5.3 gal/hr
    b. 5.0 gal/hr
    c. 5.7 gal/hr

13. How should fuel quantity be determined before flight?
    a. Refer to the fuel gauges
    b. Use a dipstick in each fuel tank, then use the appropriate conversion to determine gallons
    c. 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.

14. The static RPM is the max RPM the pilot should expect when full power is applied to a stationary aircraft, and is _____?
    a. 2000 RPM
    b. 2000 – 2500 RPM
    c. 2700 RPM
    d. 2460-2560 RPM

15. The engine winter fronts should be removed for temperatures warmer than:
    a. $7^{o}C$
    b. $-7^{o}C$
    c. $0^{o}C$
    d. $10^{o}C$

16. What is the max flap angle setting?
    a. 30^{o}
    b. 32^{o}
    c. 40^{o}
    d. 45^{o}

17. Best glide at max gross weight and flaps up is ____ kts.
    a. 85
    b. 65
    c. 60
    d. 70

18. What is the Gross weight V_{REF} (approach speed) for the C150? (1.3 V_{SO} KCAS x $\sqrt{\frac{landing\ weight}{Gross\ weight}}$)
    a. 55 KIAS
    b. 54 KIAS
    c. 53 KCAS
    d. 40 MPH

19. What type of oil is used in DTH unless otherwise advised by maintenance?
    a. Phillips XC20w50
    b. Aeroshell 15w50
    c. Phillips XC25w60
    d. Phillips Type M 20w50

20. The oil capacity of this plane is 6 quarts, however it is routinely flown with 5 quarts. At what point shall the oil be filled with an additional quart?
    a. 4
    b. 5
    c. 6
    d. 7

21. How long is takeoff power permitted to be used at one time?
    a. 0+02
    b. Unlimited
    c. 0+10
    d. 0+05

22. What is the minimum and maximum oil temperature in flight?
    a. $100^oF/240^oF$
    b. $130^oF/266^oF$
    c. $245^oF/473^oF$
    d. $150^oF/302^oF$

23. Intentional spins with flaps extended are:
    a. Allowed
    b. Prohibited
    c. Encouraged
    d. Discouraged

24. When securing the fuel caps, and during a walkaround, pilots must be vigilant of the vented type fuel cap on the fuel tank(/s). Which fuel cap(/s) are vented?
    a. Left
    b. Right
    c. Both

25. How do you properly secure the oil dipstick?
    a. Place it anywhere inside the engine cowling
    b. Twist it on until it is snug
    c. Twist it on until it can't twist anymore
    d. Put it back in the seat-back pocket

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 C150M is:
    a. 12,500'
    b. 13,100'
    c. 14,000'
    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 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 C150?
    a. -15C to 15C
    b. -25C to 5C
    c. -15C to 5C
    d. -10C to 0C

34. If necessary for flight, the fuel tanks should be retopped after each refueling to assure maximum capacity?
    a. False
    b. True

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
    a. Lean to peak RPM
    b. Lean for 50 RPM lean of peak RPM
    c. Lean until engine roughness, then enrichen slightly for smooth engine operation.
    d. Leaning should only be performed above 5000' ASL.

36. Use of partial carb heat:
    a. Can be used to get rid of a little bit of carb ice.
    b. Is useful when trying to warm up the cabin.
    c. Should not be used without a carburetor temperature gauge because this can create more ice.
    d. Can be used to assist engine smoothness when running very lean mixture settings.

II. Abnormals/Emergencies

1. What will you do if the door opens in flight?

2. What items will you check if you experience a rough engine?

3. If there is abnormal static on the radio what can you do?

4. What should you do if on your return to the KBM hangar it is unclear where you should park your aircraft?

5. After misjudging a flare in a windy crosswind landing, you roll off the runway and hit a runway edge light with the propellor. You shut down the aircraft with the mixture, magnetos, and master. What should you do now?

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:_____