DO NOT MARK ON THIS EXAMINATION

## DAYTON AVIATION SERVICES, LLC CESSNA 172 EXAM

## 21 JANUARY 2025

## Exam Instructions:

- 1. Provide your answers on DAS Form 132 Written Exam Record
- 2. References for this exam include:
  - Federal Aviation Regulations (FAR) 14 CFR Parts 61 and 91
  - Aeronautical Information Manual (AIM)
  - DAS Standard Operating Procedures 11 Dec 24
  - FAA-H-8083-3C Airplane Flying Handbook
  - FAA H-8083-25C Pilots Handbook of Aeronautical Knowledge
- 3. Required passing score: 80%
- 4. The exam will be graded by a DAS Instructor and corrected to 100% with the pilot

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- 1. The maximum certified takeoff weight for the normal category is \_\_\_\_\_ pounds.
  - a. 2500
  - b. 2400
  - c. 2300
  - d. 2100
- 2. The maximum combined weight capacity for baggage areas 1 and 2 is:
  - a. 100 pounds
  - b. 120 pounds
  - c. 170 pounds
  - d. None of the Above

Enter the following speeds (KIAS, sea level):

- 3. V<sub>x</sub>\_\_\_\_\_
- 4. V<sub>Y</sub>\_\_\_\_\_
- 5. V<sub>NO</sub>\_\_\_\_\_
- 6. V<sub>NE</sub>\_\_\_\_\_
- 7. V<sub>FE</sub> (10° flap) \_\_\_\_\_ / V<sub>FE</sub> (>10° flap) \_\_\_\_\_
- 8. A gradual loss of RPM and eventual engine roughness may result from:
  - a. Formation of carburetor ice
  - b. Loss of oil pressure
  - c. Low fuel
  - d. Magneto problems
- 9. If total loss of oil pressure is accompanied by a rise in oil temperature, there is a good reason to suspect:
  - a. The oil pressure gauge is inoperative
  - b. The outside air temperature is too high for the power setting
  - c. An engine failure is imminent
  - d. The mixture is too lean
- 10. During the run-up magneto check, the RPM drop should not exceed
  - \_\_\_\_\_ RPM on either magneto; or greater than
  - \_\_\_\_\_ RPM difference between magnetos.
- 11. [C-172P] V<sub>FE</sub> maximum flap extension speed for 10°, and for greater than 10° of flaps is:
  - a. 100 MPH, 100 MPH
  - b. 110 KIAS, 85 KIAS
  - c. 100 KIAS, 85 KIAS
  - d. 115 MPH

12. The maximum demonstrated crosswind velocity is \_\_\_\_\_ knots.

- a. 25
- b. 10
- c. 15
- d. 12

13. [C-172M] Calculate the following weight and balance problem:

	<u>Weight</u>	<u> Moment / 1000</u>
Basic Empty Weight	1550	57.26
Fuel (50 Gallons)		
Pilot and Front Passenger	340	
Rear Passenger	150	
Baggage Area 1	30	
Baggage Area 2	0	

- a. Center of gravity TOO FAR AFT; weight within limits
- b. Aircraft within weight/CG limits in UTILITY category
- c. Aircraft is OVERWEIGHT/CG is within limits
- d. Weight and CG IN LIMITS/NORMAL category

14. The minimum operating oil level is 4.5 quarts. What is the maximum sump oil level?

- a. 8 quarts
- b. 9 quarts
- c. 7 quarts
- d. 6 quarts

15. [C-172 M Only] The battery is rated at:

- a. 12 volts
- b. 60 AMPS
- c. 45 AMPS
- d. 24 Volts

16. In warm weather, the oil pressure gauge must show pressure within \_\_\_\_\_ seconds.

- a. 15
- b. 30
- c. 60

17. Total useable fuel capacity for a C-172 M with long range tanks is

- a. 54 gallons
- b. 50 gallons
- c. 62 gallons
- d. 48 gallons

- 18. Total fuel capacity for the C-172P with standard range tanks is
  - a. 54 gallons
  - b. 43 gallons
  - c. 21.5 gallons
  - d. 50 gallons
- 19. The avionics power switch must be \_\_\_\_ during engine start to:
  - a. ON, ensure proper operation of gauges
  - b. ON, ensure the magnetos are operating
  - c. OFF, prevent electrical fire in the engine compartment
  - d. OFF, prevent possible damage to avionics
- 20. Where is the top of the normal operating range of the tachometer at each altitude?
  - a. 2700 at all altitudes.
  - b. Sea level 2600
    5000' 2650
    10000' 2700
  - c. Sea level 2300 5000' - 2500 10000' - 2700
  - d. Sea level 2500 5000' - 2600 10000' - 2700
- 21. To lean to the Recommended Lean:
  - a. Lean to 50 degrees rich of Peak EGT.
  - b. Lean until the engine runs rough and then enrich 2 full turns of the mixture knob
  - c. Lean to peak EGT
  - d. Do nothing
- 22. [C-172M] Maximum flap setting for take-off and landing is:
  - a. 0°, 40°
  - b. 10°, 30°
  - c. 10°, 40°
- 23. Using the wind component chart, calculate the wind components for the following conditions: Runway 19; reported wind 240 at 13 knots
  - a. 13kts headwind, 17kts crosswind
  - b. 8kts headwind, 10kts crosswind
  - c. 8kts tailwind, 10kts crosswind
  - d. 10kts headwind, 9kts crosswind

- 24. Calculate the following cruise performance (C172M): Weight: 2300 Pounds Pressure altitude: 6000ft BHP: 65%
  - a. 2500 RPM, 127 MPH, 7.3 GPH
  - b. 2650 RPM, 128 MPH, 6.8 GPH
  - c. 2400 RPM, 121 MPH, 6.8 GPH
  - d. 2500 RPM, 126 MPH, 7.1 GPH
- 25. Compute the landing distance (ground roll) for the following conditions: Gross Weight 2300 lbs, PA 1000', 59°F, Headwind 5Kts
  - a. 520 feet
  - b. 560 feet
  - c. 482 feet
  - d. 468 feet