EGLIN AERO CLUB C-172 OPEN BOOK EXAMINATION

This exam is to be used for qualification in all Eglin Aero Club C-172 aircraft which include the C-172P, C-172N, and T-41A. Unless otherwise noted, all information is taken from the C-172P flight manual. Questions specific to the C-172N and T-41A are noted.

(The following questions are taken from C-172P data)

1. Total usable fuel capacity for aircraft with long range tanks is:

    a. 54 gallons
    b. 50 gallons
    c. 62 gallons
    d. 40 gallons

2. Total usable fuel capacity for aircraft with standard tanks is:

    a. 40 gallons
    b. 43 gallons
    c. 21.5 gallons
    d. 50 gallons

3. The maximum certificated takeoff weight for the C-172P model in the normal category is_____pounds:

4. 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

5. Maneuvering speeds for the C-172P KIAS are.

    2400 lbs._____
    2000 lbs._____
    1600 lbs._____

6. List the following speeds for the C-172P (KIAS-sea level):

    Vx_____ Vno_____
    Vy_____ Vne_____
    Vfe_____10°Flaps____30°Flaps Vglide_____(flaps up)

7. 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

8. If a total loss of oil pressure is accompanied by a rise in oil temperature, there is a good reason to suspect:

    a. The oil pressure gage 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

9. The avionics power switch must be___during engine start to_____.

    a. ON, ensure proper operation of gages
    b. ON, ensure the magnetos are operating
    c. OFF, prevent electrical fire in engine compartment
    d. OFF, prevent possible damage to avionics

10. During the run-up magneto check, the RPM drop should not exceed____RPM on either magneto or greater than____RPM difference between magnetos.

    a. 100, 50
    b. 125, 50
    c. 175, 50
    d. 50, 25

11. Using 10° wing flaps for takeoff in a C-172P reduces the ground roll and total distance over an obstacle by approximately_____percent.

    a. 25
    b. 50
    c. 5
    d. 10

12. When landing in a strong crosswind, use the following procedure for selecting the approach flap setting:

    a. Always use 30 degree flaps
    b. Always use 0 degree flaps
    c. Use the minimum flap setting required for the field length
    d. Use 10 degree flaps

13. The maximum demonstrated crosswind velocity for the C-172P is____knots.

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

14. During a balked landing (go around), reduce the flap setting to ___degrees immediately after full power is applied.

    a. 0
    b. 10
    c. 20
    d. 30

15. Using the wind component chart, calculate the wind components for the following conditions:

    Runway 19; reported wind 240° at 13 knots

    a. 13K headwind, 17K crosswind
    b. 8K headwind, 10K crosswind
    c. 8K tailwind, 10K crosswind
    d. 10K headwind, 9K crosswind

16. Calculate the following short field takeoff ground roll using **C-172P** data:

    Pressure altitude: 1000 feet
    Temp: 40 degrees C
    Flaps: 10°
    Weight: 2200 pounds
    Wind: 150 degrees at 12 knots
    Runway: 19

    a. 702
    b. 855
    c. 864
    d. 850

17. Calculate the following cruise performance using **C-172P** data:

    Weight: 2400 pounds
    Pressure altitude: 6000 feet
    Temperature: 20 degrees above standard
    BHP: 66%

    a. 2500RPM, 112KTAS, 7.4GPH
    b. 2450RPM, 110KTAS, 7.4 GPH
    c. 2400RPM, 108KTAS, 7.4 GPH
    d. 2400RPM, 109KTAS, 7.3 GPH

18. Calculate the following short field landing ground roll and over 50 foot obstacle distance using **C-172P** data:

    Pressure altitude: Sea level
    Temperature: 30 degrees C
    Flaps: 30 degrees
    Weight: 2400 pounds
    Wind: 010 degrees at 10 knots
    Runway: 19

    a. 570 and 1325 feet
    b. 627 and 1457 feet
    c. 513 and 1193 feet
    d. 855 and 1987 feet

19. Calculate the following **C-172P** weight and balance problem:

	Weight	Moment
Basic Empty Weight	1496.3	58.5
Long Range Tanks Full	_____	_____
Pilot and Front Passenger	__ 340	_____
Rear Passenger	__170	_____
Baggage Area 1	___30	_____
Baggage Area 2	____ 0	_____
Ramp Weight and Moment	_____	_____
Start/Taxi/Run-up (2 gallons)	_____	_____
Takeoff Weight/Moment	_____	_____

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

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(Questions 20 and 21 are taken from C-172N and T-41A data)

20. The maximum certificated takeoff weight for the C-172N and T-41A is_____pounds.

21. The flap extension speeds(Vfe) for the C-172N and T-41A are_____.

C-172N_____KIAS
T-41A_____MPH

(Questions 22 thru 25 are taken from T-41A data)

22. Total usable fuel for the T-41A is _____gallons (standard tanks):

a. 40
b. 36
c. 39
d. 53

23. The T-41A oil capacity is_____quarts and the engine should not be operated with less than_____quarts.

a. 7/5
b. 8/5
c. 8/6
d. 6/4

24. The correct fuel management procedure for a VFR flight with a climb to cruising altitude of 5500 feet in the T-41A is:

a. Fuel selector on BOTH at all times
b. Fuel selector on BOTH for takeoff and climb
c. Fuel selector set to LEFT or RIGHT during cruise
d. Both b and c above are correct

25. List the following speeds for the T-41A (MPH-sea level))

Vx_____ Vno_____
Vy_____ Vne_____
Va (2300 lbs)_____ Vglide (flaps up)_____