DO NOT WRITE ON THIS TEST November 2025

Kirtland Flight Center Aircraft Test

Cessna Hawk XP II

For the following questions, you will need to refer to the (1) Cessna Pilot Operating Handbook (POH), (2) the Kirtland Flight Center N161KW Checklist, (3) Garmin Supplements, and (4) the Isham 210-horsepower Supplemental Type Certificate (STC). The bonus questions at the end of the test are optional and can improve your score.

USE THE ATTACHED ANSWER SHEETS

1. The Hawk XP II engine is a 6-cylinder Continental IO-360-K that is rated at 210 horsepower for 5 minutes, and 195 horsepower continuously. One of the cited fuel flow rates at full throttle (2,800 rpm) is _____

   a. 18 gallons per hour at sea level
   b. 16 gallons per hour at 4,000 ft MSL
   c. 13 gallons per hour at 8,000 feet MSL
   d. 13 gallons per hour at 12,000 feet MSL

2. The engine cowl flap should typically be open during ___

   a. Enroute climb, balked landing, and after landing.
   b. Cruise.
   c. Cruse and descent.

3. The engine oil capacity including the oil filter is _____

   a. 8 quarts.
   b. 9 quarts.
   c. 10 quarts.

4. Do not operate the engine with less than ____

   a. 6 quarts of oil.
   b. 7 quarts of oil.
   c. 8 quarts of oil.
   d. 9 quarts of oil.

5. (True or False) – The oil pressure indicator should indicate positive oil pressure within 30 seconds in normal operating conditions.

6. The magneto check is accomplished at 1,800 RPM. What is the maximum drop per mag and the maximum difference between mags?

   a. 150 RPM max drop; +/- 50 RPM difference between mags
   b. 125 RPM max drop; +/- 50 RPM difference between mags
   c. 150 RPM max drop; +/- 25 RPM difference between mags

7. (True or False) – During engine runup, the propeller should be cycled from high to low rpm, and returned to high rpm (full in).

8. (True or False) – During taxiing and ground operations, the desired idle speed of the engine should be maintained at 800 to 1,000 rpm.

9. Zero oil pressure and rising oil temperature indicate that engine failure is _____

   a. imminent and the pilot should prepare for a forced landing.
   b. not indicated because failure of sensors or wiring is suspected.
   c. likely within 10 minutes.

10. During cruise at 80% power, adjust the fuel mixture for altitude using _____

   a. the peak exhaust gas temperature (EGT) gauge reading
   b. best power
   c. 50 degrees F rich of peak EGT gauge reading

11. The fuel capacity for all flight conditions is _____

   a. 54 total and 48 usable.
   b. 52 total and 49 usable.
   c. 50 total and 44 usable.

12. The recommended fuel grade is 100 LL and the color is ____

   a. Green
   b. Blue
   c. Red

13. (True or False) – The maximum certificated weight in the POH for normal category is 2,550 lbs.

14. The maximum combined weight capacity for the two baggage areas is _____

   a. 200 pounds
   b. 240 pounds
   c. 237 pounds

15. Maximum Flap Extended Speed (V_{fe}) is ___

   a. 85 KIAS for all increments
   b. 80 KIAS for 10-degree increment
   c. 90 KIAS for all increments

16. The aircraft battery is rated at ___ and the alternator charges at ____

   a. 12 and 14 volts
   b. 24 and 28 volts
   c. 32 and 38 volts

17. If a circuit breaker pops open for an interior light, how many times can it be reset?

    a. Once
    b. Twice
    c. As many times as deemed necessary

18. (True or False) – Excessive high voltage (alternator over charging) is indicated by a red indicator light above the Garmin G5. The over-voltage sensor will automatically shut down the alternator. Assuming the over voltage is only momentary, the pilot should attempt to reactivate the alternator system by switching both sides of the master switch off and on.

19. (True or False) – If prolonged starter cranking is necessary, allow the starter to cool at frequent intervals because excessive heat may damage the armature.

20. When towing the aircraft, do not exceed the nose-gear turning angle of ____ degrees on either side of center:

    a. 10
    b. 20
    c. 30
    d. 45

21. Tire pressures for the Hawk should be:

    a. Nose 35 psi, mains 30 psi
    b. Nose 45 psi, mains 38 psi
    c. Nose 40 psi, mains 38 psi

22. If the pitot static system is suspected of causing erroneous readings, the pilot should ____

    a. Declare an emergency
    b. Pull the ALT (alternate) static source valve
    c. All of the above

23. Assuming these conditions (two people on board, aircraft total weight of 2,150 pounds, propeller windmilling, and flaps up), the maximum glide distance obtained at an airspeed of 69 KIAS will be approximately ____

    a. 600 feet per minute.
    b. 600 feet per nautical mile.
    c. none of the above

24. (True or False) – Steep slips should be avoided with flap settings greater than 20 degrees.

25. POH page 4-8. Takeoff V_r (rotation speed) for 0 or 10 degrees flaps is ____

    a. 55 KIAS
    b. 58 KIAS
    c. 50 KIAS

26. The maximum demonstrated crosswind component for the Hawk XP II is ____

a. 20 knots
b. 12 knots
c. 15 knots

27. The manual trim systems are ____

a. Elevator trim
b. Elevator trim and rudder trim
c. Elevator trim, rudder trim, and aileron trim

28. In all flight configurations, the stall warning horn will sound ___

a. at 5 to 10 KIAS above the stall.
b. when the stall begins.
c. when entering a spin.

29. According to Garmin supplement, the autopilot can be disconnected by ____

a. pushing the AP key on the GMC 507,
b. pushing the red “A/P Disc” button on the pilot’s yoke
c. activating the pitch trim switch
d. In an emergency, pulling the AUTOPILOT circuit breaker
e. All of the above

30. Various factors affect the stall speeds in aircraft. Stall speeds for a 2,550-pound Hawk with the most forward center of gravity is ____

a. 54 KIAS indicated with flaps up and 0 degrees of bank
b. 58 KIAS indicated with flaps set at 30 degrees and 20 degrees of bank
d. 49 KIAS indicated with flaps set at 40 degrees and 30 degrees of bank
e. A and C

31. During runup and for takeoff, lean the fuel mixture for field elevation by setting ____

a. 50 degrees F lean of peak Exhaust Gas Temperature
b. best power
c. 50 degrees F rich of peak Exhaust Gas Temperature

32. The Garmin Smart Glide button initiates _____

a. the Autopilot to set best glide speed if the aircraft is greater than 2 nautical miles from an airport.
b. cyan chevrons on the map page that point towards the best airport for the pilot to glide to when engine power is lost.
c. the Autopilot to turn the aircraft towards an airport if the airport is within gliding distance.
d. All of the above

33. When the “Go ARND” push switch is pressed, what happens?

a. The Flight Director command bars will initiate a go-around pitch attitude and wing levels.
b. The pilot must select the CDI to the appropriate navigation source and select the desired lateral and vertical flight director modes.
c. All of the above.

Garmin G3X Touch Electronic Flight Instrument System Questions (Pilots should refer to the FAA Approved AFMS for the Garmin G3X Touch EFIS for detailed procedures.)

34. (True or False). – On startup, if the G3X System Status Message “AHRS REVERT” is displayed, IFR operations are prohibited.

35. What statement is true regarding SafeTaxi or Charview Functions?

a. These functions shall not be used as the sole basis for ground maneuvering
b. Charview functions are not qualified to be used as an airport moving map display (AMMD)
c. These functions are meant for surface orientation to improve situational awareness during ground operations
d. All of the above

36. Which of the following equipment is required for Instrument Flight Rules flying with the G3X Touch installed and vacuum pump/analog engine instrumentation removed?

a. Air data and attitude/ Heading Unit (ADAHRS)
b. Magnetometer (GMU)
c. Engine Indicating System (EIS)
d. All of the above

37. (True or False) – The G3X Touch is capable of pulling ADC and/or AHRS data from the standby G5 in the event of a main ADC and/or attitude failure.

38. If the following indication on the G3X occurs in flight, what should aircraft attitude be limited to until internal accuracy tolerances have been met: ALIGNING KEEP WINGS LEVEL

a. ± 5 bank, ± 5 pitch, 150 KTAS or less
b. ± 10 bank, ± 5 pitch, 200 KTAS or less
c. ± 15 bank, ± 10 pitch, 175 KTAS or less
d. ± 12 bank, ± 10 pitch, 150 KTAS or less

39. What should your immediate action be if you see AP or AFCS flashing on PFD, Continuous high-low aural tone?

a. Disconnect the autopilot
b. Maintain/Regain aircraft control manually
c. Declare an emergency
d. None of the above

40. (True or False) – Upon failure of the magnetometer and subsequent heading failure, if the G3X Touch DG/HSI has a valid GPS signal, the instrument will display GPS track information.

41. The annotation AFCS on the PFD indicates that:

a. The automatic flight control system is operated in a "degraded" mode and not all functions are available
b. GFC 500 Flight Director and Autopilot have failed
c. Electric Pitch Trim is inoperative
d. All of the above

42. The annotation "**AP**" on the PFD indicates that ___

a. Pilot has disconnected the GFC 500 autopilot; pilot must manually fly the airplane
b. GFC 500 autopilot has failed; manually fly the airplane
c. GFC 500 autopilot is not receiving data or is corrupted; manually fly the airplane
d. Electric pitch trim is inoperative; use trim wheel

43. The annotation "**GPSS**" on the PFD indicates that ___

a. G3X has an internal GPS failure. Switch to external GPS or utilize standby G5
b. G3X GPS steering command to the autopilot has been lost. Select desired alternate autopilot lateral mode.
c. Difference detected between the G3X and G5 attitude/heading detected
d. G3X GPS WAAS receiver faulty, revert to lateral navigation only with GPS

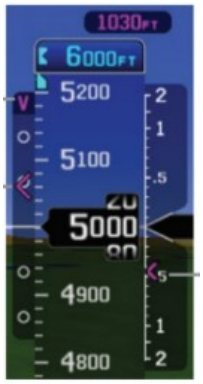
44. (True or False) – You should disable Electronic Stability Protection (ESP) from the GFC 500 autopilot prior to conducting maneuvers (where bank may exceed 45 degrees, and pitch exceeding 20 degrees) in the practice area, otherwise, the autopilot may engage Level Mode.

45. (True or False) – IFR operations are prohibited using G3X Touch while FPL Source is selected in Internal GPS Navigation.

46. Refer to figure below. What do the green triangles on the attitude indicator roll scale represent?

a. Current turn rate
b. Standard rate turn tic markers
c. Trend vector
d. None of the above

47. Refer to the figure below. What does the magenta arrow on the right side of the altimeter represent?



a. Required vertical speed indicator (RVSI) to meet the ILS Glideslope (GS)
b. Required vertical speed indicator (RVSI) to meet target altitude on a VNAV profile
c. Current rate of descent
d. None of the above

48. (True or False) – Amber colored Bands on the Engine Indication System (EIS) indicate warning ranges for the parameter the instrument represents.

For questions 49 and 50, compute the takeoff distance at maximum gross weight with the following conditions:

5,000 ft MSL field
2,550 lbs (max gross weight)
Headwind 5 KIAS
67 degrees F (20 degrees C)
Grass Runway
Flaps 10 degrees

49. What is the ground roll?

a. 1,315 feet
b. 1,250 feet
c. 1,437 feet

50. To clear 50-foot obstacle?

    a. 2,280 feet
    b. 2,491 feet
    c. 2,353 feet

For questions 51 - 53, what are the time, fuel, and distance for a Maximum rate of climb from sea level to a pressure altitude of 7,500 feet with flaps up and no wind?

51. Time?

    a. 10 minutes
    b. 11 minutes
    c. 12 minutes

52. Fuel?

    a. 2.7 gal
    b. 3.95 gal
    c. 4.15 gal

53. Distance?

    a. 9 nm
    b. 12 nm
    c. 15 nm

For questions 54 – 58, calculate the answers assuming cruise at these conditions:

Power 2600 RPM
Manifold Pressure 18 inches Hg
Cruise altitude 10,000 feet MSL
Maximum gross weight
45 gallons usable fuel remaining (after the climb)
Land with 45-minute reserve
Standard conditions with no wind
Disregard distance covered in climb and subsequent descent

54. Brake horsepower?

    a. 68 percent
    b. 61 percent
    c. 65 percent

55. GPH?

    a. 8.7
    b. 10.4
    c. 10.7

56. TAS, KIAS?

a. 122
b. 119
c. 116

57. Range, nm?

a. 575
b. 513
c. 445
d. 540

58. Endurance, hours?

a. 3.6
b. 4.3
c. 4.4

59. Compute the landing distance (ground roll) for the following conditions:

Pressure Altitude 5,000 feet; 10 degrees C.; Headwind of 9 kts, flaps 40 degrees

a. 730 feet
b. 657 feet
c. 920 feet

60. Using the POH and the December 2024 Weight and Balance Form, in what category does the aircraft plot in the Center of Gravity Moment Envelope?

a. Normal
b. Utility
c. Neither

Exam sample	Weight, pounds	Moment
Empty Weight	1631.13	
Pilot and Front Passenger	340	
Rear Passengers	170	
Baggage Area 1	50	
Total Fuel, 49 gallons	294	
Totals	2485.13	

Note: The December 2024 weight and balance form for N161KW lists an empty weight of 1,631 lbs and a usable weight of 919 lbs.

OPTIONAL BONUS QUESTIONS

61. If landing with a flat main tire, the pilot should?

    a. Fly a normal approach speed, set full flaps, touch down on the good tire first, and use aileron control to hold the airplane off the flat tire as long as possible.
    b. Use a soft field landing technique.
    c. Divert to an airport equipped with an arresting cable.

62. The minimum RPM required for takeoff is?

    a. 2,700
    b. 2,800
    c. 2,650

63. V_x is the best angle of climb speed and results in ___

    a. The most altitude in a given amount of time
    b. The greatest gain in altitude for a given horizontal distance
    c. Neither a nor b above

64. V_y is the best rate of climb speed and results in ____

    a. The greatest gain in altitude for a given amount of time
    b. The most altitude in a given distance
    c. Neither a nor b above

USAF AERO CLUB KNOWLEDGE EXAM RECORD, page 1 of 2

Name:_____ Date Taken:_____

Type Exam: ___ Standardization ___ Make & Model: **C-172 Hawk XP II**

Raw Score (%): _____ Date Corrected to 100%:_____

I certify all items were thoroughly debriefed and all questions answered

_____ _____

Pilot's Signature Instructor's Signature

1.	(A)	(B)	(C)	(D)		26.	(A)	(B)	(C)	(D)	
2.	(A)	(B)	(C)	(D)		27.	(A)	(B)	(C)	(D)	
3.	(A)	(B)	(C)	(D)		28.	(A)	(B)	(C)	(D)	
4.	(A)	(B)	(C)	(D)		29.	(A)	(B)	(C)	(D)	
5.	(T)	(F)				30.	(A)	(B)	(C)	(D)	
6.	(A)	(B)	(C)	(D)		31.	(A)	(B)	(C)	(D)	
7.	(T)	(F)				32.	(A)	(B)	(C)	(D)	
8.	(T)	(F)				33.	(A)	(B)	(C)	(D)	
9.	(A)	(B)	(C)	(D)		34.	(T)	(F)			
10.	(A)	(B)	(C)	(D)		35.	(A)	(B)	(C)	(D)	
11.	(A)	(B)	(C)	(D)		36.	(A)	(B)	(C)	(D)	
12.	(A)	(B)	(C)	(D)		37.	(A)	(B)	(C)	(D)	
13.	(T)	(F)				38.	(A)	(B)	(C)	(D)	
14.	(A)	(B)	(C)	(D)		39.	(A)	(B)	(C)	(D)	
15.	(A)	(B)	(C)	(D)		40.	(T)	(F)			
16.	(A)	(B)	(C)	(D)		41.	(A)	(B)	(C)	(D)	
17.	(A)	(B)	(C)	(D)		42.	(A)	(B)	(C)	(D)	
18.	(T)	(F)				43.	(A)	(B)	(C)	(D)	
19.	(A)	(B)	(C)	(D)		44.	(T)	(F)			
20.	(A)	(B)	(C)	(D)		45.	(T)	(F)			
21.	(A)	(B)	(C)	(D)		46.	(A)	(B)	(C)	(D)	
22.	(A)	(B)	(C)	(D)		47.	(A)	(B)	(C)	(D)	
23.	(A)	(B)	(C)	(D)		48.	(T)	(F)			
24.	(T)	(F)				49.					See next page
25.	(A)	(B)	(C)	(D)		50.					See next page

USAF AERO CLUB KNOWLEDGE EXAM RECORD, page 2 of 2

Name:_____ Date Taken:_____

Type Exam: ___ Standardization ___ Make & Model: **Cessna C-172 Hawk XP II**

49.	(A)	(B)	(C)	(D)	
50.	(A)	(B)	(C)	(D)	
51.	(A)	(B)	(C)	(D)	
52.	(A)	(B)	(C)	(D)	
53.	(A)	(B)	(C)	(D)	
54.	(A)	(B)	(C)	(D)	
55.	(A)	(B)	(C)	(D)	
56.	(A)	(B)	(C)	(D)	
57.	(A)	(B)	(C)	(D)	
58.	(A)	(B)	(C)	(D)	
59.	(A)	(B)	(C)	(D)	
60.	(A)	(B)	(C)	(D)	
61.	(A)	(B)	(C)	(D)	
62.	(A)	(B)	(C)	(D)	
63.	(A)	(B)	(C)	(D)	
64.	(A)	(B)	(C)	(D)	

Cessna C-172 Hawk XP II CLOSED BOOK EXAM

Write the Emergency Action Procedures for the following:

Electrical Fire in Flight

1.
2.
3.

If fire appears out and electrical power is necessary:

4.
5.
6.
7.

Engine Fire in Flight

1.
2.
3.
4.
5.
6.
7.

Engine Failure in Flight

1.
2.
3.
4.
5.
6.
7.
8.

Fill in all the applicable blanks (KIAS)

1. V_A _____at 2,550 lbs
2. V_A _____at 2,150 lbs
3. V_A _____ at 1,750 lbs
4. V_{FE} _____ for all increments
5. Best Glide Speed ____ at maximum gross weight

NAME: _____

A/C: **C-172 Hawk XP II**

DATE: _____