**Appendix II**



Training Course Outline

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| --- |
| **List of Effective Pages** |
|   |   |   |   |   |
| **Topic** | **Revised By** | **Date** | **Rev #** | **Page:** |
| **List of Effective Pages** | **Harry Kraemer** | **01/11/2016** | **7** | **1** |
| **Record of Revisions** | **Harry Kraemer** | **01/11/2016** | **7** | **2** |
| **Stage Exam I** | **Harry Kraemer** | **01/11/2016** | **7** | **3** |
| **Stage Exam II** | **Harry Kraemer** | **01/11/2016** | **7** | **12** |
| **Stage Exam III** | **Harry Kraemer** | **01/11/2016** | **7** | **19** |
| **End-Of-Course Exam A** | **Harry Kraemer** | **01/11/2016** | **7** | **28** |
| **End-Of-Course Exam B** | **Harry Kraemer** | **01/11/2016** | **7** | **41** |
| **Stage Exam Answer Sheet** | **Harry Kraemer** | **01/11/2016** | **7** | **52** |
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|  WIFA PPL TCO Rev 7 Revised Jan 11 2016 |   |   |   |   |
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WIFA PPL TCO Rev 7

Revised Jan 11 2016

Washington International Flight Academy

Private Pilot Airplane Single Engine Land

Stage Exam I

Passing grade is 80% or higher.

Figures are located in the following publication: FAA-CT-8080-2E

You may use a Plotter, E6B, CX-2 or Sportys flight calculator for the exam.
Please circle the correct answer. If you make a mistake and circle the wrong answer, please correct using the following method: Draw an X through the incorrect letter and circle the correct answer. For example:

A. B. C.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Attempt:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grade:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What is one purpose of wing flaps?**

A. To relieve the pilot of maintaining continuous pressure on the controls.

B. To enable the pilot to make a steeper approach to a landing without increasing the airspeed.

C. To decrease the wing area to vary the lift.

1. **Angle of attack is defined as the angle between the chord line of an airfoil and the**

A. rotor plane of rotation.

B. pitch angle of an airfoil.

C. direction of the relative wind.
2. **What force makes an airplane turn?**

A. Centrifugal force.

B. The vertical component of lift.

C. The horizontal component of lift.
3. **An airplane said to be inherently stable will**

A. not spin.

B. require less effort to control.

C. be difficult to stall.
4. **In what flight condition is torque effect the greatest in a single-engine airplane?**

A. High airspeed, high power, high angle of attack.

B. Low airspeed, low power, low angle of attack.

C. Low airspeed, high power, high angle of attack.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **The lateral boundaries of the SFRA are**

A. 15 nautical miles radius around the DCA airport.

B. 30 nautical miles radius around the White House.

C. 30 nautical miles radius around the DCA VOR.
2. **When operating in the SFRA an aircraft must have the following equipment:**

A. Two way radio and a mode C transponder.

B. A Transponder and distance measuring equipment.

C. Two way radio and distance measuring equipment.
3. **Prior to departure from KGAI a pilot must:**

A. File an SFRA flight plan and notify homeland security.

B. File an SFRA flight plan and receive a transponder code from clearance.

C. File an SFRA flight plane and set the VFR code of 1200 on the transponder.
4. **The Flight Restricted Zone is an area where**

A. General aviation civilian flights are prohibited unless an air marshal is on board.

B. Only aircraft registered in the USA can enter.

C. General aviation civilian flights can enter when the pilot in command has a discreet PIN.
5. **If intercepted while flying, the pilot of the intercepted aircraft will take the following actions:**

A. Set transponder code to 7700, tune the radio to 121.500 and acknowledge instructions from the intercepting aircraft.

B. Set transponder code to 7777, tune radio to 121.500 and acknowledge instructions from the intercepting aircraft.

C. Set transponder code to 7500, tune radio to 121.500 and acknowledge instructions from the intercepting aircraft.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **In the Northern Hemisphere, the magnetic compass will normally indicate a turn toward the south when**

A. the aircraft is decelerated while on a west heading.

B. a right turn is entered from a west heading.

C. a left turn is entered from an east heading.
2. **Which instruments will become inoperative if the static vents become clogged?**

A. Airspeed and vertical speed.

B. Altimeter only.

C. Altimeter and vertical speed.
3. **What is the maximum flaps extended speed?** (refer to figure 4 in appendix 2)

A. 100 MPH

B. 60 MPH

C. 165 MPH
4. **Which condition would cause the altimeter to indicate a lower altitude than true altitude?**

A. Air temperature lower than standard.

B. Atmospheric pressure lower than standard.

C. Air temperature warmer than standard.
5. **An electrical system failure (battery and alternator) occurs during flight. In this situation you would**

A. probably experience failure of the engine ignition system, fuel gauges, aircraft lighting system and avionics equipment.

B. experience avionics equipment failure.

C. probably experience engine failure due to the loss of engine-driven fuel pump and also experience failure of the radio equipment, lights and all instruments that require alternating current.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. (Refer to figure 49 on page 36 of appendix 2) **According to the airport diagram, which statement is true?**

A. Runway 30 is equipped with at position E with emergency arresting gear to provide a means of stopping military aircraft.

B. The takeoff and landing portion of runway 12 begins at position B.

C. Takeoffs may be started at position A on Runway 12, and the landing portion of this runway begins at position B.
2. (Refer to figure 50 on page 37 of appendix 2) **This airport is equipped with a wind tetrahedron. Based on the wind indications shown, the pilot should enter**

A. left-hand traffic for runway 18.

B. left-hand traffic for runway 36.

C. right-hand traffic for runway 18
3. **A slightly high glide slope indication from a precision approach path indicator is**

A. 3 red lights and 1 white

B. 3 white lights and 1 red

C. 4 white lights
4. **When landing behind a heavy aircraft, which procedure should be followed to avoid wake turbulence?**

A. Stay below and to one side of its final approach path.

B. Stay well below its final approach path and land at least 2,000ft behind.

C. Stay above its final approach path all the way to touch down.
5. **Who should not participate in Land and Hold Short Operations (LAHSO)?**

A. Military pilots flying aircraft above 12,500 pounds maximum take off weight.

B. Student Pilots.

C. Private pilots with no instrument rating.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **A blue segmented circle on a Sectional Chart depicts which class of airspace?**

A. Class B.

B. Class D.

C. Class C.
2. **The normal radius of the outer area of Class C airspace is**

A. 20 NM

B. 10 NM

C. 5 NM
3. **All operations within class C airspace must be**

A. equipped with a dual VOR navigation system.

B. on a flight plan filed prior to departure.

C. in an aircraft equipped with a transponder with mode C capability.
4. **Operations within class D airspace requires**

A. Transponder with mode C.

B. Two-way Radio.

C. Both A and B
5. **Minimum VFR weather required for flight within Class B airspace is**

A. 3 SM visibility, 500' above, 1000' below and 2000' horizontal from clouds

B. 3 SM visibility and clear of clouds

C. 5 SM visibility, 1000' above, 1000' below and 1 SM horizontal from clouds.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **The correct method for stating 10,500 feet MSL to ATC is**

A. TEN POINT FIVE

B. TEN THOUSAND, FIVE HUNDRED

C. ONE ZERO THOUSAND, FIVE HUNDRED
2. (Refer to figure 32 on page 22 of appendix 2) **You are flying to COE airport. The winds are reported to be calm and you are arriving on a heading of 010 degrees. Which runway and pattern should you use?**

A. Left hand traffic to runway 01.

B. Right hand traffic to runway 01.

C. Left hand traffic to runway 19.
3. **ATIS is the continuous broadcast of recorded information concerning**

A. non control information in selected high-activity terminal areas.

B. nonessential information to reduce frequency congestion.

C. pilots of radar-identified aircraft that are in dangerous proximity to terrain.
4. **When activated, an ELT transmits on**

A. 122.800

B. 121.500

C. 123.075
5. **If instructed by ground control to taxi to runway 06, the pilot may proceed**

A. via taxiways and across runways to, but not onto, runway 06.

B. to the next intersecting runway and hold short there.

C. via taxiways and across runways to and line up on runway 06 and wait for take off clearance.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **A 3rd class medical certificate was issued to a 25 year old pilot on September 4th of 2011. This medical will no longer be valid on the following date.**

A. 10-01-2013

B. 09-30-2016

C. 10-01-2016
2. **In order to fly with passengers, a flight review is**

A. required every 12 calendar months.

B. not required if 3 landings were completed to a full stop within the previous 90 days.

C. required every 24 calendar months.
3. **An airplane and an a glider and converging. The glider is to the left of the airplane. Who has the right of the way?**

A. The glider

B. The airplane

C. Both aircraft should alter their course to the right.
4. **Except when taking off or landing, what is the minimum safe altitude over a congested area?**

A. 1000' above the highest obstacle within a 2000' horizontal radius.

B. 500' above the highest obstacle within a 1000' horizontal radius.

C. 500' from any person or property.
5. **At what altitude does it become mandatory for all occupants of an aircraft to use oxygen?**

A. When flying at 13,500' for over 30 minutes.

B. When flying at 14,500' for over 30 minutes.

C. When flying at 15,500'.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **An annual inspection was completed on June 15th of 2012. The aircraft will be considered un airworthy on which of the following dates?**

A. 06-15-2013

B. 06-30-2013

C. 07-01-2013

WIFA PPL TCO Rev 7

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Private Pilot Airplane Single Engine Land

Stage Exam II

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WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **If a pilot experiences spatial disorientation during flight in a restricted visibility condition, the best way to overcome the effect is to:**

A. Concentrate on yaw, pitch, and roll sensations.

B. Rely upon the aircraft instrument indications.

C. Consciously slow the breathing rate until symptoms clear and then resume normal breathing rate.

1. **Which technique should a pilot use to scan for traffic to the right and left during straight-and-level flight?**

A. Systematically focus on different segments of the sky for short intervals.

B. Concentrate on relative movement detected in the peripheral vision area.

C. Continuous sweeping of the windshield from right to left.
2. **What is a correct response if an exhaust leak were to be detected while in flight?**

A. Open air vents or windows.

B. Take deep breaths so as to inhale more oxygen.

C. Increase altitude so the effects of CO would be decreased.
3. **Effects of carbon monoxide poisoning include:**

A. sweating, increased breathing, and paleness.

B. dizziness, blurred vision, and loss of muscle power.

C. motion sickness, tightness across the forehead, and drowsiness.
4. **What preparation should a pilot make to adapt the eyes for night flying?**

A. Wear sunglasses after sunset until ready for flight.

B. Avoid red lights at least 30 minutes before the flight.

C. Avoid bright white lights at least 30 minutes before the flight.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What is one of the neglected items when a pilot relies on short and long term memory for repetitive tasks?**

A. Checklists

B. Situation awareness

C. Flying outside the envelope

1. **Risk management, as part of the aeronautical decision making (ADM) process, relies on which features to reduce the risks associated with each flight?**

A. The mental process of analyzing all information in a particular situation and making a timely decision on what action to take.

B. Application of stress management and risk element procedures.

C. Situational awareness, problem recognition, and good judgment.

1. **Who is responsible for determining whether a pilot is fit to fly for a particular flight, even though he or she holds a current medical certificate?**

A. The FAA

B. The medical examiner

C. The pilot

1. **What is the one common factor which affects most preventable accidents?**

A. Structural failure.

B. Mechanical malfunction.

C. Human error.

1. **What is the antidote when a pilot has a hazardous attitude, such as “Macho”?**

A. Nothing will happen.

B. Taking chances is foolish.

C. I can do it.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What causes variations in altimeter settings between weather reporting points?**

A. Coriolis force.

B. Unequal heating of the Earth's surface.

C. Variation of terrain elevation.

1. **One weather phenomenon which will always occur when flying across a front is a change in the**

A. Type of precipitation

B. Stability of the air mass.

C. Wind direction

1. **During the life cycle of a thunderstorm, which stage is characterized predominately by downdrafts?**

A. Cumulus

B. Dissipating.

C. Mature.

1. **What conditions are necessary for the formation of thunderstorms?**

A. High humidity, lifting force, and unstable conditions.

B. Lifting force, moist air, and extensive cloud cover.

C. High humidity, high temperature, and cumulus clouds.

1. **One in-flight condition necessary for structural icing to form is**

A. Visible moisture.

B. Stratiform clouds.

C. Small temperature/dewpoint spread.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What is meant by the term “dewpoint”?**

A. The temperature at which conditions and evaporation are equal.

B. The temperature at which dew will always form.

C. The temperature to which air must be cooled to become saturated.

1. **What is the approximate base of the cumulus clouds if the surface air temperature at 1,000 feet MSL is 70F and the dewpoint is 48F?**

A. 4,000

B. 5,000

C. 6,000

1. **What would decrease the stability of an air mass?**

A. Cooling from below.

B. Decrease in water vapor.

C. Warming from below.

1. **What are characteristics of a moist, unstable air mass?**

A. Cumuliform clouds and showery precipitation.

B. Poor visibility and smooth air.

C. Stratiform clouds and showery precipitation.

1. **Which weather conditions should be expected beneath low-level temperature inversion layer when the relative humidity is high?**

A. Smooth air, poor visibility, fog, haze, or low clouds.

B. Turbulent air, poor visibility, fog, low stratus type clouds, and showery precipitation.

C. Light wind sheer, poor visibility, haze, and light rain.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **To get a complete weather briefing for the planned flight, the pilot should request**

A. General briefing

B. An outlook briefing

C. A standard briefing

1. **(Refer to figure 12 on page 26) What are the current conditions depicted for Chicago Midway Airport (KMDW)?**

A. Sky 7000 feet overcast, visibility 1-1/2SM, rain.

B. Sky 700 feet overcast, visibility 1-1/2SM, rain.

C. Sky 700 feet overcast, visibility 11, occasionally 2SM, with rain.

1. **(Refer to figure 14 on page 27) The wind and temperature at 12,000 feet MSL as reported by a pilot are**

A. 080 at 21 knots and -7C

B. 090 at 21MPH and -9F

C. 080 at 21 knots and -7F

1. **To best determine general forecast weather conditions over several states, the pilot should refer to**

A. Aviation Area Forecasts

B. Weather Depiction Charts

C. Satellite Maps

1. **(Refer to Figure 15 on page 27) Between 1000Z and 1200Z the visibility at KMEM is forecast be?**

A. ½ Statute mile

B. 3 Statute miles

C. 6 Statute miles

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **SIGMETs are issued as a warning of weather conditions hazardous to which aircraft?**

A. All aircraft

B. Large aircraft only

C. Small aircraft

1. **How are Significant Weather Prognostic Charts best used by a pilot?**

A. For overall planning at all altitudes.

B. For analyzing current frontal activity and cloud coverage.

C. For determining areas to avoid (Freezing levels and turbulence).

1. **How should contact be established with an En Route Flight Advisory Service (EFAS) station, and what service would be expected?**

A. Call Flight Watch on 122.0 for information regarding actual weather and thunderstorm activity along proposed route.

B. Call flight assistance on 122.5 for advisory service pertaining to severe weather.

C. Call EFAS on 122.2 for routine weather, current reports on hazardous weather, and altimeter settings.

1. **When the term “light and variable” is used in reference to a Winds Aloft Forecast, the coded group and windspeed is**

A. 0000 and less than 6 knots.

B. 9900 and less than 5 knots.

C. 9900 and less than 6 knots.

1. **What information is provided by the Radar Summary Chart that is not shown on other weather charts?**

A. Lines and cells of hazardous thunderstorms.

B. Ceilings and precipitation between reporting stations.

C. Types of clouds between reporting stations.

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Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What effect does high density altitude, as compared to low density altitude, have on propeller efficiency and why?**

A. Efficiency is increased due to less friction on the propeller blades.

B. Efficiency is reduced because the propeller exerts less force at high density altitudes than at low density altitudes.

C. Efficiency is reduced due to the increased force of the propeller in the thinner air.

1. **Which combination of atmospheric conditions will reduce aircraft takeoff and climb performance?**

A. Low temperature, low relative humidity, and low density altitude

B. High temperature, low relative humidity, and low density altitude.

C. High temperature, high relative humidity, and high density altitude.
2. **(Refer to figure 8 on page 3) What is the effect of a temperature increase from 25 to 50F on the density altitude if the pressure altitude remains at 5,000 feet?**

A. 1,200-foot increase.

B. 1,400-foot increase.

C. 1,650-foot increase.
3. **(Refer to figure 41 on page 29) Determine the total distance required for takeoff to clear a 50-foot obstacle.**

**OAT: STD**

**Pressure altitude: 4,000ft**

**Takeoff Weight: 2,800lb**

**Headwind component: Calm**

A. 1,500 feet.

B. 1,750 feet.

C. 2,000 feet.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 36 on page 26) What fuel flow should a pilot expect at 11,000 feet on a standard day with 65 percent maximum continuous power?**

A. 10.6 gallons per hour.

B. 11.2 gallons per hour.

C. 11.8 gallons per hour.
2. **(Refer to figure 37 on page 26) What is the crosswind component for a landing on Runway 18 if the tower reports the wind at 220 at 30 knots?**

A. 19 knots

B. 23 knots

C. 30 knots
3. **If an emergency situation requires a downwind landing, pilots should expect a faster**

A. airspeed at touchdown, a longer ground roll, and better control throughout the landing roll.

B. ground speed at touchdown, a longer ground roll, and the likelihood of overshooting the desired touchdown point.

C. ground speed at touchdown, a shorter ground roll, and the likelihood of undershooting the desired touchdown point.
4. **(Refer to figure 61 on page 45) How should the 500-pound weight be shifted to balance the plank on fulcrum?**

A. 1 inch to the left.

B. 1 inch to the right.

C. 4.5 inches to the right.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 33 on page 23)Calculate the weight and balance and determine if the CG and the weight of the airplane are within limits.**

**Front seat occupants: 350 lb**

**Rear seat occupants: 325 lb**

**Baggage: 27 lb**

**Fuel: 35 gal**

A. CG 81.7, out of limits forward.

B. CG 83.4, within limits.

C. CG 84.1, within limits.

1. **(Refer to figure 33 on page 23) What is the maximum amount of baggage that can be carried when the airplane is loaded as follows?**

**Front seat occupants: 387 lb**

**Rear seat occupants: 293 lb**

**Fuel: 35 gal**

A. 45 pounds.

B. 63 pounds.

C. 220 pounds.

1. **Which is true concerning the blue and magenta colors used to depict airports on Sectional Aeronautical Charts?**

A. Airports with control towers underlying Class A, B, and C airspace are shown in blue; Class D and E airspace are magenta.

B. Airports with control towers underlying Class C, D, and E airspace are shown in magenta.

C. Airports with control towers underlying Class B, C, D, and E airspace are shown in blue.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What action should a pilot take when operating VFR in a Military Operations Area (MOA)?**

A. Obtain a clearance from the controlling agency prior to entering the MOA.

B. Operate only on the airways that transverse the MOA.

C. Exercise extreme caution when military activity is being conducted.
2. **(Refer to figure 23 on page 14) The visibility and cloud clearance requirements to operate VFR during daylight hours over Sandpoint Airport at 1,200 feet AGL are**

A. 1 mile and clear of clouds.

B. 1 mile and 1,00 feet above, 500 feet below, and 2,000 feet horizontally from each cloud.

C. 3 miles and 1,000 feet above, 500 feet below, and 2,000 feet horizontally from each cloud.
3. **As standard operating practice, all inbound traffic to an airport without a control tower should continuously monitor the appropriate facility from a distance of**

A. 25 miles

B. 10 miles

C. 15 miles
4. **Refer to Figure 53 on page 38) When approaching Lincoln Municipal from the west at noon for the purpose of landing, initial communications should be with**

A. Lincoln Approach Control on 123.0 MHz.

B. Minneapolis Center on 128.75 MHz.

C. Lincoln Tower on 118.5 MHz.

WIFA PPL TCO Rev 7

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1. **Where can locations for VOR test facilities be found?**

A. Aeronautical Information Manual.

B. Sectional charts.

C. Airport/Facilities Directory.
2. **(Refer to figure 27 on page 18 and figure 29 on page 20) The VOR is tuned to Jamestown VOR (area 4 in figure 27), and the aircraft is positioned over Cooperstown Airport (Area 2 in figure 27). Which VOR indication is correct?**

A. 9

B. 2

C. 6
3. **Which of the following is a true statement concerning the Global Positioning System?**

A. Advances in technology make it possibly to rely completely on GPS units.

B. GPS databases and paper navigational charts are updated at the same time.

C. Navigating by GPS must be integrated with other forms of navigation.
4. **(Refer to figure 31 on page 21) On a magnetic heading of 035, the magnetic bearing TO the station is**

A. 035

B. 180

C. 215

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 29 on page 20, illustration 8) The VOR receiver has the indications shown. What radial is the aircraft crossing?**

A. 030

B. 210

C. 300
2. **How should a VFR flight plan be closed at the completion of a flight at a controlled airport?**

A. The tower will automatically close the flight plan when the aircraft turns off the runway.

B. The pilot must close the flight plan with the nearest FSS or other FAA facility upon landing.

C. The tower will relay instructions to the nearest FSS when the aircraft contacts tower for landing.
3. **Who is primarily responsible for maintaining an aircraft in airworthy condition?**

A. Pilot-in-command.

B. Owner or operator.

C. Mechanic.
4. **The most important rule to remember in the event of a power failure after becoming airborne is to**

A. immediately establish the proper gliding attitude and airspeed.

B. quickly check the fuel supply for possible fuel exhaustion.

C. determine the wind direction to plan for the forced landing.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 9 on page 4, area C) How should the flight controls be held while taxiing a tricycle-gear equipped airplane with a left quartering tailwind?**

A. Left aileron up, elevator neutral.

B. Left aileron down, elevator down.

C. Left aileron up, elevator down.
2. **The angular difference between true north and magnetic north is**

A. magnetic deviation.

B. magnetic variation.

C. compass acceleration error.
3. **To minimize the side loads placed on the landing gear during touchdown, the pilot should keep the**

A. direction of motion of the aircraft parallel to the runway.

B. longitudinal axis of the aircraft parallel to the direction of its motion.

C. downwind wing lowered sufficiently to eliminate the tendency for the aircraft to drift.
4. **(Refer to figure 23 on page 14) Determine the estimated time en route for a flight from Priest River Airport (Area 1) to Shoshone County Airport (Area 3). The wind is from 030 at 12 knots and the true airspeed is 95 knots. Add 2 minutes for climb-out.**

A. 29 minutes.

B. 27 minutes.

C. 31 minutes.
5. **How far will an aircraft travel in 2-1/2 minutes with a ground speed of 98 knots?**

A.2.45 NM

B. 3.35 NM

C. 4.08 NM

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 24 on page 15) On what course should the VOR receiver (OBS) be set to navigate direct from Hampton Varnville Airport (Area 1) to Savannah VORTAC (area 3)?**

A. 003

B. 183

C. 200
2. **(Refer to figure 63 on page 45) In flying the rectangular course, when should the aircraft bank vary from a steep bank to a medium bank?**

A. Corner 1.

B. Corner 3.

C. Corner 2 and 3.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

Washington International Flight Academy

Private Pilot Airplane Single Engine Land

End-Of-Course Exam A

Passing grade is 80% or higher.

Figures are located in the following publication: FAA-CT-8080-2E

You may use a Plotter, E6B, CX-2 or Sportys flight calculator for the exam.
Please circle the correct answer. If you make a mistake and circle the wrong answer, please correct using the following method: Draw an X through the incorrect letter and circle the correct answer. For example:

A. B. C.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Attempt:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grade:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **Which is not a primary flight control surface?**

A. Stabilator

B. Ailerons

C. Flaps

1. **When are the 4-forces of flight in equilibrium?**

A. When the aircraft is accelerating.

B. During unaccelerated flight.

C. When the aircraft is at rest on the ground.
2. **The angle of attack at which and airplane wing stalls will**

A. remain the same regardless of gross weight.

B. increase as the gross weight increases.

C. decrease as the gross weight is decreased.
3. **As altitude increases, the indicated airspeed at which a given airplane stalls in a particular configuration will**

A. remain the same regardless of altitude.

B. decrease as the true airspeed decreases.

C. decrease as the true airspeed increases.
4. **Why is frost considered hazardous to flight?**

A. Frost slows the airflow over the airfoils causing an increase in control effectiveness.

B. Frost spoils the smooth flow of air over the wings, thereby decreasing lift generation.

C. frost changes the basic shape of the airfoil, thereby decreasing lift generation. .

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **Floating caused by Ground Effect will be most realized during an approach to land when at**

A. a higher than normal angle of attack.

B. less than the length of the wingspan above the surface.

C. twice the length of the wingspan above the surface.

1. **Changes in the center of pressure of a wing affect the aircraft's**

A. aerodynamic balance and controllability.

B. lift/drag ratio.

C. lifting capability.

1. **Which basic flight maneuver increases the load factor on an airplane as compared to straight-and-level flight?**

A. Stalls

B. Turns

C. Climbs

1. **In the Northern Hemisphere, a magnetic compass will normally indicate a turn toward the north if**

A. a left turn is entered from a west heading.

B. an aircraft is decelerated while on an east or west heading.

C. an aircraft is accelerated while on an east or west heading.

1. **If the pitot tube and outside static vents become clogged which instruments would be affected?**

A. The altimeter, turn-coordinator, and airspeed indicator.

B. The altimeter, attitude indicator, and vertical speed indicator.

C. The altimeter, airspeed indicator and vertical speed indicator.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What is an important airspeed limitation that is not color coded on an airspeed indicator?**

A. Never exceed speed.

B. Maneuvering speed.

C. Maximum structural cruising speed.

1. **Altimeter setting is the value to which the barometric pressure scale of the altimeter is set so the altimeter indicates**

A. true altitude at field elevation.

B. absolute altitude at field elevation.

C. calibrated altitude at field elevation.

1. **How do variations in temperature affect the altimeter?**

A. Pressure levels are raised on warm days and the indicated altitude is lower than true altitude.

B. Higher temperatures expand the pressure levels and the indicated altitude is higher than true altitude..

C. Lower temperatures lower the pressure levels and the indicated altitude is lower than true altitude..

1. **A turn coordinator provides and indication of the**

A. angle of bank up to 30 degrees.

B. movement of the aircraft about the yaw and roll axes.

C. attitude of the aircraft with reference to the longitudinal axis.

1. **Excessively high engine temperatures, either in the air or on the ground, will**

A. result in damage to heat-conducting hoses and warping of cylinder cooling fans.

B. increase fuel consumption and may increase power due to the increased heat.

C. cause loss of power, excessive oil consumption, and possible permanent internal engine damage.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What is an advantage of a constant-speed propeller?**

A. Permits the pilot to select and maintain a desired cruising speed.

B. Permits the pilot to select the blade angle for the most efficient performance.

C. Provides a smoother operation with stable RPM and lessens engine vibrations.

1. **The possibility of carburetor icing exists even when the ambient air temperature is as**

A. high as 95F and there is visible moisture.

B. high as 70F and the relative humidity is high.

C. low as 0F and the relative humidity is high.

1. **What change occurs in the fuel/air mixture when carburetor heat is applied?**

A. The fuel/air mixture will become richer.

B. A decrease in RPM will result from the leaner mixture.

C. The fuel/air mixture will become leaner

1. **The uncontrolled firing of the fuel/air mixture in advance of normal spark ignition is known as**

A. combustion.

B. detonation.

C. pre-ignition.

1. **To keep a battery charged, the alternator voltage output should be**

A. equal to the battery voltage.

B. higher than the battery voltage.

C. lower than the battery voltage.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **An airport's rotating beacon operated during the daylight hours indicates**

A. the Control Tower is not in operation.

B. there are obstructions on the airport.

C. the weather at the airport located in class D airspace is below basic VFR minimums.

1. **(Refer to figure 51 on page 37) The segmented circle indicates that a landing on runway 26 will be with a**

A. right-quartering headwind.

B. right-quartering tailwind.

C. left-quartering headwind.

1. **(Refer to figure 48 on page 36) VASI lights as shown by illustration C indicate that the airplane is**

A. on the glide slope.

B. below the glide slope.

C. above the glide slope.

1. **Wingtip vortices are created only when an aircraft is**

A. heavily loaded.

B. generating lift.

C. configured for landing.

1. **During a night flight, you observe steady red and green lights ahead and at the same altitude. What is the general direction of movement of the other aircraft?**

A. The other aircraft is flying away from you.

B. The other aircraft is approaching head on.

C. The other aircraft is crossing from the left.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **Prior to starting each maneuver, pilots should**

A. visually scan the entire area for collision avoidance.

B. check altitude, airspeed and heading indications.

C. announce their intentions on the nearest CTAF.

1. **After landing at a tower-controlled airport, when should the pilot contact ground control?**

A. When advised by the tower to do so.

B. Prior to turning off the runway.

C. After turning on to a taxiway.

1. **Unless otherwise authorized, two way radio communications with ATC are required for landings or take offs**

A. at all tower controlled airports only when the weather is IFR.

B. at all tower controlled airports.

C. at all tower controlled airports located within Class D airspace only.

1. **The vertical limit of Class C airspace above the primary airport is normally**

A. 3000' AGL.

B. 4000' MSL.

C. 4000 AGL.

1. **If ATC advises that radar service is terminated when a pilot is departing Class C airspace, the transponder should be set to**

A. 5101

B. 1200

C. 1205

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **The correct method of stating 4,500 feet MSL to ATC is**

A. FOUR POINT FIVE.

B. FORTY-FIVE HUNDRED

C. FOUR THOUSAND FIVE HUNDRED

1. **An ATC radar facility issues the following advisory to a pilot flying north in calm winds:

“ Traffic, 2 o'clock, 2 miles, southbound...”

Where should the pilot look for the traffic?**

A. Northeast.

B. Northwest.

C. North.

1. **Which procedure is recommended to ensure that the emergency locator transmitter (ELT) has not been activated?**

A. Turn off the aircraft ELT after landing.

B. Ask the airport tower if they are receiving and ELT signal.

C. Monitor 121.500 before engine shutdown.

1. **Where is the “Available Landing Distance” data published for an airport that utilizes LAHSO?**

A. In the Airmans Information Manual (AIM)?

B. FAR 91, General operating and flight rules.

C. Airport Facility / Directory.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **The definition of nighttime is**

A. the time between the end of evening civil twilight and the beginning of morning civil twilight.

B. 1 hour after sunset to 1 hour prior to sunrise.

C. sunset to sunrise.

1. **Which would provide the greatest gain in altitude in the shortest distance during climb after takeoff?**

A. Vy

B. Vx

C. Vr

1. **What documents must be in your personal possession or readily accessible in the aircraft while operating as Pilot In Command?**

A. A pilot certificate with an endorsement showing the date of an annual flight review.

B. Certificates showing accomplishment of a checkout in the aircraft and a current biennial flight review.

C. An appropriate pilot certificate and an appropriate medical certificate.

1. **How soon after the conviction for driving while intoxicated by alcohol or drugs shall it be reported to the FAA?**

A. 10 Days, upon request.

B. 24 Hours.

C. 60 Days.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **For private pilot operations, a first class medical issued to a 35 year old pilot on October 21st of this year, will expire at midnight on**

A. October 31st, 5 years later.

B. October 21st, 5 years later.

C. October 31st, 1 year later.

1. **To act as PIC of an aircraft carrying passengers, the pilot must have made at least**

A. 3 take offs and 3 landings within the preceding 60 days.

B. 3 take offs and 3 landings within the preceding 90 days.

C. 3 take offs and 3 landings within the preceding 30 days.

1. **What exception, if any, permits a private pilot to act as PIC of and aircraft carrying passengers who pay for the flight?**

A. There is no exception.

B. If the passengers pay for the expenses of the fuel and oil only.

C. If a donation is being made to a charitable organization for the flight.

1. **(Refer to figure 27 on page 18, area 2) The day VFR visibility and cloud clearance requirements to operate over the town of Cooperstown, after departing and climbing out of Cooperstown airport at or below 700' AGL are**

A. 1 mile and clear of clouds.

B. 3 miles and clear of clouds.

C. 1 mile and 1,000' above, 500' below and 2,000' horizontal from clouds.

1. **The operator of an aircraft that has been involved in an incident is required to submit a report to the NTSB**

A. within 10 days.

B. within 7 days.

C. upon request.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **What effect, if any, does high humidity have on aircraft performance?**

A. It decreases aircraft performance.

B. It increases aircraft performance.

C. It has no effect on performance.

1. **Refer to figure 8, on page 3) You have planned a cross country flight on a warm spring morning. Your course includes a mountain pass which is at 11,500' MSL. The service ceiling of your aircraft is 14,000 MSL. If the following conditions exist, can you safely conduct this flight?

Temperature: 65 F Altimeter Setting: 29.92**

A. Yes, I have adequate performance to fly over the mountain pass.

B. Yes, I have adequate performance to fly over the mountain pass with half tanks of fuel.

C. No, I do not have adequate performance to fly over the mountain pass.

1. **(Refer to figure 8 on page3) Determine the density altitude for these conditions:**

 **Altimeter Setting: 30.35 Runway Temp. +25F Airport Elva: 3,894 ft MSL**

A. 2,900' MSL

B. 3,500' MSL.

C. 2,000' MSL.

1. **(Refer to figure 41, on page 29) Determine the total distance required for take-off to clear a 50-foot obstacle.

OAT: Std P.Altitude: Sea Level Take-off Weight: 2,700 lb Headwind: Calm**

A. 1,700 feet.

B. 1,000 feet.

C. 1,400 feet.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 36, on page 26) What is the expected fuel consumption for a 500-mile flight under the following conditions:

P. Altitude: 4,000ft Temp. +29C Man. Press: 21.3” Wind: Calm**

A. 31.4 gallons.

B. 36.1 gallons.

C. 40.1 gallons.

1. **(Refer to figure 35, on page 25) What is the maximum amount of baggage that may be loaded aboard the airplane for the C.G. To remain within the moment envelope?**

|  |  |  |
| --- | --- | --- |
|  | Weight (LB) | Moment / 1000 |
| Empty Weight | 1,350 | 51.5 |
| Pilot and front Passenger | 250 | --- |
| Rear Passengers | 400 | --- |
| Baggage | --- | --- |
| Fuel, 30 Gal. | --- | --- |
| Oil, 8 qt. | --- | -0.2 |

A. 105 Pounds.

B. 110 Pounds.

C. 120 Pounds.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figures 33 and 34 on pages 23 and 24)
Determine if the airplane weight and balance is within limits.**

|  |  |
| --- | --- |
| Front Seat occupants | 415 lbs |
| Rear seat occupants | 110 lbs |
| Fuel, main tanks | 44 Gal |
| Fuel, aux tanks | 19 Gal |
| Baggage | 32 lbs |

A. Weight within limits, CG out of limits.

B. Overweight, CG within limits.

C. Overweight and CG out of limits.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

Washington International Flight Academy

Private Pilot Airplane Single Engine Land

End-Of-Course Exam B

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A. B. C.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Attempt:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grade:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **Which statement best defines hypoxia?**

A. An abnormal increase in the volume of air breathed.

B. A state of oxygen deficiency in the body.

C. A condition of gas bubble formation around the joints and muscles.

1. **Which would most likely result in hyperventilation?**

A. Emotional tension, anxiety or fear.

B. An extremely slow rate of breathing and insufficient oxygen..

C. The excessive consumption of alcohol.
2. **If a pilot experiences spatial disorientation during flight in restricted visibility condition, the best way to overcome the effect is to**

A. concentrate on yaw, pitch and roll sensations.

B. rely upon the aircraft instrument indications.

C. consciously slow the breathing rate until symptoms clear and then resume normal breathing rate..
3. **What preparation should a pilot make to adapt the eyes for night flying?**

A. Wear sunglasses after sunset until ready for flight.

B. Avoid red light at least 30 minutes prior to departure.

C. Avoid bright white light at least 30 minutes prior to departure.
4. **What is a correct response if an exhaust leak were to be detected in flight?**

A. Open air vents or windows.

B. Take deep breaths so as to inhale more oxygen.

C. Breath in to a paper bag.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **Hazardous attitudes occur to every pilot to some degree at some time. What are some of those attitudes?**

A. Poor risk management and lack of stress management.

B. Anti Authority, macho, impulsivity, resignation and invulnerability.

C. Laziness, aggressiveness and poor decision making.

1. **The wind at 5,000 feet AGL is southwesterly while the surface wind is southerly. This difference in direction is primarily due to**

A. stronger pressure gradient at higher altitudes.

B. stronger Coriolis force at the surface.

C. friction between the wind and the surface.

1. **One weather phenomenon which will always occur when flying across a front is a change is the**

A. wind direction.

B. type of precipitation.

C. stability of air mass.

1. **What conditions are necessary for the formation of thunderstorms?**

A. High humidity, high temperature and cumulus clouds.

B. High humidity, lifting force and unstable conditions.

C. Lifting force, moist air and extensive cloud cover.

1. **In which environment is aircraft structural ice most likely to have the highest accumulation rate?**

A. Freezing drizzle.

B. Freezing rain.

C. Freezing fog.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **If the temperature/dew-point spread is small and decreasing, and the temperature is 70F, what type of weather is most likely to develop?**

A. Low level clouds or fog.

B. Towering cumulus clouds.

C. Cirrus clouds.

1. **Which conditions result in the formation of frost?**

A. The temperature of the surrounding air is at or below freezing when small drops of moisture fall on the collecting surface.

B. The temperature of the collecting surface is at of below freezing when small droplets of moisture fall on the surface.

C. The temperature of the collecting surface is at or below the dew-point of the adjacent air and the dew-point is below freezing.

1. **At approximately what altitude above the surface would the pilot expect the base of cumuliform clouds if the surface air temperature is 82F and the dew-point is 38F?**

A. 9,000' AGL.

B. 10,000' AGL.

C. 11,000' AGL.

1. **What are the characteristics of unstable air?**

A. Turbulence and good surface visibility.

B. Turbulence and poor surface visibility.

C. Smooth air and poor surface visibility.

1. **When requesting weather information for the following morning, a pilot should request**

A. a standard briefing.

B. an outlook briefing.

C. an abbreviated briefing.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 12 on page 5 of appendix 2) What are the current conditions depicted for Chicago Midway Airport (KMDW)?**

A. Sky 700 feet overcast, visibility 1-1/2 SM and heavy rain.

B. Sky 700 feet overcast, visibility between 2 and 11 SM with rain.

C. Sky 700 feet overcast, visibility 1-1/2 SM and rain.

1. **(Refer to figure 14 on page 6 of appendix 2) The base and tops of the overcast layer reported by a pilot are**

A. 5,500' AGL and 7,200' MSL.

B. 1,800' MSL and 5,500' MSL.

C. 7,200' MSL and 8,900' MSL.

1. **(Refer to figure 16 on page 7 of appendix 2) What sky conditions and visibility are forecast for upper Michigan in the eastern portions after 2300Z?**

A. Ceiling 1,000 feet overcast and 3-5 SM visibility.

B. Ceiling 1,000 feet overcast and 3-5 NM visibility

C. Ceiling 100 feet overcast and 3-5 SM visibility

1. **(Refer to figure 15 on page 6 of appendix 2) What is the forecast wind for KMEM from 1600Z until the end of the forecast?**

A. No significant winds.

B. Variable in direction at 6 knots.

C. Variable in direction at 4 knots.

1. **(Refer to figure 18 on page 9 of appendix 2) What weather phenomenon is causing IFR conditions in central Oklahoma?**

A. Low visibility only.

B. Low ceilings and visibility.

C. Heavy rain.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 19 on page 10 of appendix 2) Look at Area “B”. What is the top for precipitation of the radar return?**

A. 24,000 MSL.

B. 24,000 AGL.

C. 2,400 MSL.

1. **(Refer to figure 17 on page 8 of appendix 2) Determine the wind and temp. aloft forecast for DEN at 9,000 feet.**

A. 230 degrees true at 21 knots. +4C

B. 230 degrees magnetic at 21 knots. -4C.

C. 230 degrees true at 21 knots. -4C.

1. **(Refer to figure 20 on page 11 of appendix 2) What weather phenomenon is forecast for the Florida area just ahead of the stationary front during the first 12 hours?**

A. Ceiling 1,000 to 3,000 feet and/or visibility 3-5 miles with intermittent precipitation

B. Ceiling 1,000 to 3,000 feet and/or visibility 3-5 miles with continuous precipitation.

C. Ceiling less than 1,000 and/or visibility less than 3 miles with continuous precipitation.

1. **SIGMETs are issued as a warning of weather conditions hazardous to which aircraft?**

A. Large aircraft only.

B. Small aircraft only.

C. All aircraft regardless of size.

1. **AIRMETs are advisories of significant weather phenomena but of lower intensities than SIGMETs and are intended for**

A. only IFR pilots.

B. only VFR pilots.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

C. all pilots.

1. **(Refer to figure 22 on page 13 of appendix 2) Look at area “2”.
Which airport is located at approximately 47 degrees 39'30”N latitude and 100 degrees 53'00”W Longitude?**

A. Crooked Lake.

B. Linrud.

C. Johnson.

1. **What action should a pilot take when operating under VFR in a MOA?**

A. Exercise extreme caution when military activity is being conducted.

B. Obtain a clearance from the controlling agency prior to entering the MOA.

C. Operate only on airways that cross through the MOA.

1. **(Refer to figure 21 on page 12 of appendix 2) Look at area “2”.
The elevation of the Chesapeake Regional Airport is**

A. 360 feet.

B. 20 feet.

C. 36 feet.

1. **(Refer to figure 25 on page 16 of appendix 2) Look at area “2”.
What is the minimum altitude required to vertically clear the obstacle on the southeast side of Winnsboro airport by 500'?**

A. 823' MSL

B. 1,403' MSL.

C. 1,013' MSL.

1. **(Refer to figure 26 on page 17 of appendix 2) Look at area “2”.
The floor of the Class B airspace at Addison Airport is**

A. Surface

B. 3,000' AGL

C. 3,000' MSL

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 21 on page 12 of appendix 2) Look at area “2”.
The flag symbol at Lake Drummond represents a**

A. visual checkpoint used to identify position for initial call-up to Norfolk Approach Control.

B. A flagpole whose elevation is higher than 100' feet AGL and may be used for navigation.

C. Compulsory reporting point for Norfolk Class C airspace.

1. **(Refer to figure 22 on page 13 of appendix 2) Look at area “2”.
The CTAF frequency for Garrison Airport is**

A. 122.9.

B. 122.8.

C. 123.0.

1. **(Refer to figure 53 on page 38 of appendix 2)
Traffic patterns at Lincoln Municipal are**

A. to the right on runways 14-32

B. to the right on Runways 17L and 35L and to the Left on Runways 17R and 35R

C. to the left on Runways 17L and 35L and to the right on Runways 17R and 35R.

1. **What information is contained in the Notices to Airmen Publication (NTAP)?**

A. Current NOTAM (D) and FDC NOTAMs.

B. Military NOTAMs only.

C. Current NOTAM (D), FDC NOTAMs and military NOTAMs.

1. **What would the airborne accuracy of a VOR be?**

A. +/- 4 degrees

B. +/- 6 degrees.

C. +4 / -6 degrees.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 25 on page 16 of appendix 2)
What is the approximate position of the aircraft if the VOR receivers indicate the 245 degree radial of Sulpher Springs VOR and the 140 degree radial of Bonham VOR?**

A. Majors Airport.

B. Meadowview Airport.

C. Glenmar Airport.

1. **(Refer to figure 29 on page 20 of appendix 2) refer to illustration 8.
The VOR receiver has the indications shown. What radial is the aircraft crossing?**

A. 030 radial.

B. 300 radial.

C. 210 radial.

1. **(Refer to figure 30 on page 21 of appendix 2)
Which ADF indication represents the aircraft tracking TO the station with the right crosswind?**

A. 2

B. 4

C. 1

1. **(Refer to figure 30 on page 21 of appendix 2) Illustration 1.
What is the relative bearing TO the station?**

A. 210 degrees.

B. 060 degrees.

C. 240 degrees.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 31 on page 21 of appendix 2) Illustration 4.
On a magnetic heading of 320 degrees, the magnetic bearing TO the station is**

A. 185 degrees.

B. 005 degrees.

C. 225 degrees.

1. **What is the minimum number of GPS satellites that are observable by a user anywhere on earth?**

A. 4

B. 5

C. 6

1. **(Refer to figure 9 on page 11, of appendix 2) Area “C”.
How should the flight controls be held while taxiing a tricycle gear airplane with a left-quartering tailwind?**

A. Left aileron up, elevator down.

B. Left aileron down, elevator down.

C. Left aileron up, elevator neutral.

1. **(Refer to figure 27 on page 18 of appendix 2)
Determine the magnetic COURSE from Breckheimer (PVT) airport (area 1) to Jamestown Airport (area 4).**

A. 180 degrees.

B. 188 degrees.

C. 360 degrees.

WIFA PPL TCO Rev 7

Revised Jan 11 2016

1. **(Refer to figure 22 on page 13 of appendix 2)
Determine the Magnetic heading and estimated time en route for a flight from Mercer county airport (area 3) to Minot airport (area 1). (add 3.5 minutes for departure and climb)

Winds: 330 degrees at 25 knots True Airspeed: 100 knots Mag. Variation: 10E**

A. 012 degrees and 48 minutes.

B. 352 degrees and 44 minutes.

C. 352 degrees and 48 minutes.

1. **(Refer to figure 28 on page 19 of appendix 2)
An aircraft departs and airport in the Pacific Standard Time Zone at 1030 PST for a 4 hour flight to an airport located in the central standard time zone. The landing should be at what coordinated universal time?**

A. 2230Z

B. 2130Z

C. 2030Z

WIFA PPL TCO Rev 7

Revised Jan 11 2016

**Answer Sheet**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stage I** | **Stage II** | **Stage III** | **End Of Course A** | **End of Course B** |
| 1. B
2. C
3. C
4. B
5. C
6. C
7. A
8. B
9. C
10. A
11. A
12. C
13. A
14. C
15. B
16. C
17. C
18. B
19. C
20. B
21. B
22. A
23. C
24. B
25. B
26. C
27. C
28. A
29. B
30. B
31. C
32. C
33. A
34. A
35. C
36. C

WIFA PPL TCO Rev 7 Revised Jan 11 2016 | 1. B
2. A
3. A
4. A
5. C
6. A
7. C
8. C
9. C
10. B
11. B
12. C
13. B
14. A
15. A
16. C
17. C
18. C
19. A
20. A
21. C
22. B
23. A
24. A
25. B
26. A
27. C
28. A
29. B
30. A
 | 1. B
2. C
3. B
4. B
5. A
6. B
7. A
8. C
9. C
10. A
11. C
12. C
13. C
14. B
15. A
16. C
17. C
18. C
19. A
20. A
21. B
22. B
23. A
24. B
25. B
26. B
27. C
28. C
29. B
30. B
 | 1. C2. B3. A4. C5. B6. B7. A8. B9. C10 .C11 .B12 .A13 .A14 .B15 .C16 .B17 .B18. A19. C20. B21. C22. A23. C24. B25. B26. A27. A28. B29. C30. B31. C32. A33. C34. C35. A36. B37. C38. C39. A40. B41. C42. C43. C44. A45. C46. C47. C48. B49. A50. A | 1. B2. A3. B4. C5. A6. B7. C8. A9. B10 .B11 .A12 .C13 .B14 .A15 .B16 .C17 .C18. A19. B20. B21. A22. C23. B24. C25. C26. A27. A28. B29. B30. C31. A32. A33. C34. A35. B36. C37. A38. B39. A40. A41. B42. B43. A44. C45. A |

WIFA PPL TCO Rev 7

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