

Private/Commercial Oral Questions

Plan a VFR flight that will utilize the maximum range of the aircraft.

The test will be of a practical nature, asking questions based on the practical flight.

All answers should be of a conservative nature.

Oral Exam Answers:

1. Did your instructor review the areas that you were deficient on your written test?
Yes -
2. What are the required aircraft documents that must be on the aircraft?
AROW – Airworthiness Certificate, Registration, Operating Limitations, Weight & Balance
3. As part of the documents, you also need all of the decals and placards in place. What are some of these required decals and placards?
N-number, compass cards, markings on the instruments, oil pressure & temp gauges
4. If you were renting an aircraft and found it was over 30 hours from a required inspection, would you fly it? How would (or could) you make it where others could not fly it?
NO – Remove airworthiness certificate and post a sign in the cockpit stating that the airworthiness certificate has been removed due to the required inspection.
5. Which of the required documents on board an aircraft has to be in view?
The Airworthiness Certificate
6. What invalidates the airworthiness certificate?
missing or inoperative required equipment, overdue inspections, aircraft damage, missing AROW
7. Tell me about the engine in our airplane.
C172 = Lycoming Model O-320-E2D, 150HP. Air cooled, horizontally-opposed, carburetor equipped 4-cylinder engine with a fixed pitch propeller.
8. What are the required maintenance items and inspections? (91.409)
Annual every 12 calendar months, 100 hour if aircraft is provided for rental/flight instruction, transponder every 24 calendar months, ELT battery every 12 calendar months.
9. What are the required ELT inspections and logbook entries? (91.207)
Inspect every 12 calendar months for proper installation, battery corrosion, operation of the crash sensor and signal from antenna. Batteries must be replaced or recharged if used for more than 1 cumulative hour or when 50 % of their useful life has expired. The new expiration date of the battery must be legibly marked on the outside of the transmitter and entered in the aircraft maintenance logbook. (91.207)
10. If your ELT was broken and you took it out, can you still fly? (91.207F)
YES - if you are training and remain within 50 nautical miles from which such local flight operations began.
11. What frequency does the ELT transmit on?
121.5 – emergency frequency
12. What are AD's and how are they logged? (know where to find them in your logbooks)
Airworthiness Directives – legally enforceable rules and instructions, issued by the FAA to correct an unsafe condition in airplanes, engines, propellers and appliances.
13. Are there any recurring AD's? (know where to find this in the AD compliance record)
Yes, there is one recurring AD for the C172. It is the front seat rails.
14. How much night flight is required for the PP Practical Test? 61.109)
3 hours
15. How many night takeoff and landings are required? (61.109)
10
16. What are the private pilot requirements – licenses, logbook entries and recent flight experience?
Must have pilot's licenses, current medical and photo ID in your presence. Must have accomplished and received a logbook endorsement for a flight review within the past 24 calendar months, must have made 3 takeoff and 3 landings in an aircraft of the same category, class and type within the past 90 days to carry passengers. (61.57)

17. If you carry passengers at night, what must you do to be current?
3 takeoff and 3 landings to a full stop at night in an aircraft of the same category, class and type.
18. If you were flying at night and you were close to an airport, what would you be looking for?
The rotating beacon.
19. What color are the lights on the rotating beacon? (civilian airport/military airport)
One white, one green / Two white, one green
20. Where do you find information about an airport, what publication?
The Airport Facility Directory (AFD)
21. If your airport had VASI lights, how could you use them?
Visual Approach Slope Indicator: white over white – too high, red over white – on proper glide path, red over red – too low. (white over white your out of site, red over red your dead, red over white you'll get home tonight)
22. What documents do you need on your person to fly?
Pilot's license, current medical certificate and a photo ID.
23. How long is a Class 3 medical good for? (61.23)
Two years (24 calendar months) if age 40 or older. Five years (60 calendar months) if under age 40.
24. What are your private pilot privileges and limitations? (61.113)
May not carry passengers or property for compensation or hire.
25. What is a flight review? (61.56)
A required flight and ground review every 24 calendar months consisting of a minimum of 1 hour ground and 1 hour flight. Must have logbook endorsement from an authorized instructor.
26. Do you need to log flight time? (61.51)
Only the flight time needed to show the required training and recent flight experience.
27. What are the various v-speeds for your aircraft?
C172: $V_x = 68$, $V_y = 91$, $V_{so} = 49$, $V_{s1} = 57$, $V_a = 112$, $V_{fe} = 100$, $V_g = 80$, $V_{no} = 145$, $V_{ne} = 182$
28. What is V_{no} and can it be found on the airspeed indicator?
 V_{no} is the Maximum Structural Cruising Speed. This is the speed not to exceed in rough /turbulent air. It is the top of the green arc on the airspeed indicator.
29. What is Indicated Airspeed?
The airspeed you read directly from your airspeed indicator.
30. What is Calibrated Airspeed?
Indicated airspeed corrected for instrument installation error. You find calibrated airspeed corrections in the Pilot Operating Handbook (POH).
31. What is True Airspeed?
The speed at which you are moving through the air. True airspeed increases 2% for every 1000 feet you are above the ground.
32. What is Groundspeed?
How fast you are going across the ground. This is the speed you read off of your GPS.
33. What are the general characteristics in regard to the flow of air around high and low pressure systems in the Northern Hemisphere?
Low Pressure – inward, upward and counterclockwise
High Pressure – outward, downward and clockwise
34. What is a "trough"?
A trough (also called a trough line) is an elongated area of relatively low atmospheric pressure. A low or trough is an area of rising air. Rising air is conducive to cloudiness and precipitation; hence the general association of low pressure and bad weather.
35. What is a "ridge"?
A ridge (also called a ridge line) is an elongated area of relatively high atmospheric pressure. These are areas of descending air. Descending air favors dissipation of cloudiness; hence the association of high pressure and good weather.
36. What are "isobars"?
An isobar is a line on a weather chart which connects areas of equal pressure or constant barometric pressure.

37. If isobars are relatively close together on a surface weather chart or a constant pressure chart, what information will this provide?
When isobars are spaced very close together, a steep pressure gradient exists which indicates higher wind speeds.
38. What is a METAR and what are the 2 types?
A METAR is an hourly surface observation of conditions observed at an airport. There are two types of METAR reports – a routine METAR report that is transmitted every hour and an aviation selected special weather report (SPECI). This is a special report that can be given at any time to update the METAR for rapidly changing weather conditions. Have a print-out or have them available on your IPAD.
39. What are Terminal Aerodrome Forecast (TAFs)?
A TAF is a concise statement of the expected meteorological conditions significant to aviation for a specified time period within 5 statute miles of the center of the airport's runway complex (terminal). Routine TAFs are valid for 24 hours and are issued four times daily at 0000Z, 0600Z, 1200Z and 1800Z.
40. What are PIREPs and where are they usually found?
PIREPs are "Pilot Reports". They are routine (UA) and urgent (UUA) reports of weather as observed by pilots enroute. They can be obtained from FSS and are usually transmitted as an individual report or appended to a surface aviation weather report.
41. Where do you find Winds Aloft?
Flight Service (1-800-WXBRIEF), DUATS, Foreflight, Fltplan.com.
42. What were the winds aloft fo our flight today?
Have them printed off or available on your electronic device.
43. What is an AIRMET? (WA)
Advisories of significant weather phenomena that describe conditions at intensities lower than those which require the issuance of SIGMET's. AIRMETS are Airmen's Meteorological Information for all weather in an area or along a route. AIRMETS are updated every 6 hours.
44. What is a SIGMET? (WS)
A SIGMET (Significant Meteorological Information) advises of non-convective weather that is potentially hazardous to all aircraft. SIGMETs are updated every 4 hours. AIRMETS are for Pilots and SIGMETs are for all aircraft.
45. What is a Convective SIGMET?
Convective SIGMETs (WST) implies severe or greater turbulence, severe icing and low-level wind shear. They are usually associated with thunderstorms and are issued every hour and updated as necessary.
46. Would you consider a SIGMET dangerous?
YES, SIGMET stands for Significant Meteorological Information.
47. Define the term "wind shear" and state the areas in which it is likely to occur?
Wind shear is defined as the rate of change of wind velocity (direction and/or speed) per unit distance. Wind shear is of special concern with low-level temperature inversions, frontal zones, thunderstorms and clear air turbulence (CAT) at high levels associated with a jet stream or strong circulation.
48. What types of weather information will you examine to determine if wind shear conditions might affect your flight?
TAFs, METARs, SIGMETs, LLWAS (low level wind shear alert system) reports, PIREPs.
49. How can you get wind shear reports?
Ask the control tower or ATC.
50. What would you do different when landing with a wind shear warning from the tower?
Increase final approach airspeed by 10 knots and be ready for an immediate go-around if wind shear (sudden loss of airspeed) is experienced.
51. What is a Micro Burst and when are they most likely to occur? (AIM 7-1-26)
Microburst are small scale intense downdrafts which, on reaching the surface, spread outward in all directions. This causes the presence of both vertical and horizontal wind shears. Microburst commonly occur within the heavy rain portion of a thunderstorm and can be found almost anywhere there is convective activity.

52. Briefly explain the following weather charts (Review charts on DUATS or Foreflight/IPAD)
- Surface Analysis: transmitted every 3 hours providing ready means of locating pressure systems and fronts, winds, temperature and dew point temperatures.
 - Weather Depiction: transmitted at 3 hour intervals and provides real time weather collected from METAR reports. Shows areas of IFR, marginal VFR and frontal positions.
 - Radar Summary: transmitted hourly identifying general areas and movement of precipitation and/or thunderstorms.
 - Weather Prog: these prognostic charts portray forecasts of selective weather conditions at specified times (12, 24, 36 and 48 hour prognostic charts).
 - Constant Pressure Analysis Charts: an upper air weather map where all information depicted is at the specified pressure of the chart. From these charts, a pilot can approximate the observed air temperature, wind and temperature-dewpoint spread along a proposed route. They also depict highs, lows, troughs and ridges aloft. They are issued twice daily at 00Z and 12Z.
- 850 mb = 5,000 ft
700 mb = 10,000 feet
500 mb = 18,000 feet
300 mb = 30,000 feet
200 mb = 39,000 feet
53. What is Absolute Altitude?
The height above the terrain or ground – AGL.
54. What is Indicated Altitude?
The altitude you read off of your altimeter – This is above sea level, not above the ground.
55. What is True Altitude?
Indicated altitude corrected for non-standard temperature and pressure. This is your actual altitude above sea level – MSL.
56. What is Pressure Altitude?
This is what the altimeter reads with standard pressure – 29.92 set in the kollsman window.
57. What is Density Altitude?
This is the altitude that the airplanes engine is performing at. It is affected by pressure, humidity and temperature.
58. What is the density altitude at Denver, Colorado on a hot summer day when the temperature is 92°F and the barometric pressure is 30.04?
First step is to determine Pressure Altitude. Pressure altitude can be determined by dialing your kollsman window to 29.92" or 1013mb the altitude displayed will be pressure altitude. Or if you want to use a mathematical equation to calculate pressure it is: $29.92 - \text{current baro.} = x$, then take $x * 1000 + \text{Current field elevation} = \text{pressure altitude}$. $29.92 - 30.04 = -.12 \times 1000 = 120 + 5431 = 5551'$ pressure altitude. Using your E6B flight computer, convert 92°F to centigrade = 34°C, set pressure altitude 5551 opposite 34°C. Density Altitude is approximately 9000'!
59. What is the effect of high density altitude on aircraft performance, and what three things contribute to high density altitude?
It reduces the performance. It is affected by pressure, humidity and temperature.
60. Have you ever had carb ice? When do you use carb heat?
Carburetor ice is when ice crystal start to build up in the venture of the carburetor. This causes restricted airflow through the carburetor and to the engine cylinder resulting in reduced power (RPM) and rough engine. Apply carb heat slowly to melt the ice.
61. What is Standard Day temperature and pressure?
59 degrees and 29.92 pressure (1013 millibars)
62. At what rate does atmospheric pressure decrease with an increase in altitude?
1" Hg per 1000 feet.
63. What dangers could there be if you were flying from a high pressure area to a low pressure area and you failed to reset your altimeter?
Your actual altitude would be lower than what was indicated on your altimeter.
Remember: Hi to Low, Look Out Below.

64. Explain how an altimeter can have a large change while on the ground from one day to another?
For an altimeter to read the correct field elevation, the current barometric pressure must be set in the kollsman window. The barometric pressure has changed causing the change in the altimeter.
65. How did you get the weather for today's flight?
DUATS, 1-800-WXBRIEF, IPAD/Foreflight
66. How would you obtain an updated weather briefing in flight? What is EFAS?
Contact the nearest FSS by locating the proper frequency from the nearest VOR station identification block or simply call EFAS or Flight Watch on frequency 122.0. En Route Flight Advisory Service (EFAS) is a service specifically designed to provide enroute aircraft with timely and meaningful weather advisories.
67. What is HIWAS and where is it found on the VFR sectional chart?
Hazardous In-Flight Weather Advisory Service (HIWAS) is a continuous broadcast of in-flight weather advisories including summarized weather warnings, SIGMETs, Convective SIGMETs, AIRMETs and urgent PIREPs. NavAids with HIWAS capability are depicted on sectional charts with an "H" in the upper right corner of the identification box.
68. What are the basic VFR weather minimums?
1000 foot ceiling and 3 miles visibility
69. If you show up to an airport and the rotating beacon is on in the middle of the day, what does this mean?
It means that the weather conditions at the airport are less than VFR
70. What is Special VFR? What are the requirements for it?
It is a special VFR clearance issued by the control tower or ATC that allows a VFR pilot to enter the Class D or E airspace with less than the required 3 miles – 500'/1000'/2000'. The pilot must request this and must have and be able to maintain at least 1 mile visibility and remain clear of the clouds. Do not cancel it until you have landed. No special VFR at night unless the aircraft meets the requirements for instrument flight and the pilot has an instrument rating.
71. What does "dew point" mean?
Dew point is the temperature to which a sample of air must be cooled to attain the state of saturation.
72. When temperature and dew point are close together (within 5 degrees), what type of weather is likely?
Visible moisture in the form of clouds, dew or fog. Also, these are ideal conditions for carburetor icing.
73. What conditions are necessary for structural icing to occur?
Visible moisture and below freezing temperatures at the point moisture strikes the aircraft.
74. Name the three types of structural icing that may occur in flight?
Clear ice, Rime ice and Mixed ice.
75. What factors must be present for a thunderstorm to form?
Sufficient water vapor, An unstable lapse rate, An initial upward boost (lifting) to start the storm process in motion.
76. What are the three stages of a thunderstorm?
Cumulus stage, Mature stage and Dissipating stage.
77. State two basic ways that fog may form.
Cooling air to the dew point / Adding moisture to the air near the ground.
78. Name several types of fog?
Upslope fog, Steam fog, Precipitation-induced fog, Advection fog, and Radiation fog.
(Fog Usually Seems Present After Rain)
79. How to determine the required runway takeoff distance?
Calculate using the takeoff distance chart in the performance section of the POH.
80. How to determine the required runway landing distance?
Calculate using the landing distance chart in the performance section of the POH.
81. How to determine the required fuel for the flight?
Calculate the correct fuel burn rate based on the cruise power setting using the chart in the performance section of the POH. Add 1 hour reserve fuel – personal minimums. (FAR's require 30 minute reserve fuel for day VFR and 45 minutes for night VFR)

82. How and when to lean the fuel mixture – takeoff and cruise?
Lean at density altitudes above 5000'. Gently ease the mixture control from the full rich position towards lean. If the engine gets a little smoother it indicates that the mixture had been too rich. Return the mixture control to full rich and repeat the procedure. Cease leaning at the point where an increase in smooth operation occurred.
83. High airport field elevation operations. Should you use flaps for takeoff?
No -
84. What would the effects be of an aft cg loaded airplane?
A lower stalling speed, unstable aircraft, poorer stall recover characteristics and harder to control.
85. What would the effects be of a forward cg loaded airplane?
A higher stalling speed, unstable aircraft, good stall recovery characteristics and harder to land/flare.
86. What is the angle of incidence?
The angle formed by the longitudinal axis of the airplane and the chord line of the wing. It is measured by the angle at which the wing is attached to the fuselage.
87. What is the angle of attack?
It is the angle formed between the chord line of the wing and the relative wind.
88. What makes an airplane stall?
Exceeding the critical angle of attack.
89. Will an aircraft stall at the same airspeed every time?
No
90. List me 4 things that change the speed at which an aircraft will stall.
Weight, Flaps, Power and Angle of Bank (load factor).
91. Describe and explain the entire pitot-static system?
Plastic tubing connects the pitot tube to the airspeed indicator and the static port opening to the airspeed indicator, the altimeter and the vertical speed indicator. Airspeed indicator works by comparing ram air to static air. Altimeter and vertical speed indicators are essentially barometers using an aneroid wafer connected to an indicator to show changes in atmospheric pressure.
92. What is the alternate static source and how and when would you use it?
On the C172, there is a valve just under the instrument panel that can be turned to the alternate position which is inside the cockpit. You would use it in the event your main static port became clogged in flight resulting in a stuck altimeter/vertical speed indicator.
93. What is the significance of the white and green arcs on the airspeed indicator?
Bottom of white arc is V_{so} – stall speed “dirty”; top of white arc is V_{fe} - max flap operating speed.
Bottom of green arc is V_{s1} – stall speed “clean”; top of green arc is V_{no} - max structural cruising speed.
94. How does the stall warning horn work?
Just before the airflow reaches the critical angle of attack, air will flow through the opening and activate a reed valve horn adjacent to the pilot's air vent.
95. What is the suction gauge and how does it work?
It measure vacuum air that is driven by a vacuum pump mounted on the rear of the engine.
96. Describe and explain how the flight instruments work – attitude and turn coordinator.
Both instruments are gyroscopes. The attitude indicator gets its power from vacuum air coming from the engine driven vacuum pump. The turn coordinator has its own electric motors getting it power from the aircraft battery.
97. What is the emergency frequency? What are the emergency transponder codes?
121.5, 7700 emergency, 7600 loss of radio communications, 7500 hi-jack
98. What does “squawk altitude” mean? What does “ident” mean?
turn on/off dial to ALT so ATC will see your altitude, push the ident button so ATC can identify you.
99. What are the dangers associated with over priming?
Flooding the engine, over heating the starter and draining the battery.
100. What is the difference between priming the engine with the primer and the throttle?
Priming with the throttle sprays fuel in the intake venturi of the carburetor which will drip back down to the air filter and the ground causing a potential for fire. The primer system sprays fuel directly into the intake manifold allowing the fuel to go directly to the cylinders.

101. What is the proper technique for starting an over primed/flooded engine?
Mixture full lean and throttle full open. As soon as the engine starts, mixture full rich and throttle to idle.
102. What is Detonation and what action should be taken if detonation is expected?
Detonation is an uncontrolled explosive ignition of the fuel/air mixture within the cylinder's combustion chamber. Detonation is characterized by high cylinder head temperatures and is most likely to occur when operating at high power settings. Corrective action may be accomplished by adjusting any of the engine controls which will reduce both temperature and pressure of the fuel air charge – reduce power, reduce the climb rate for better cooling, enrich the fuel/air mixture and open cowl flaps if available.
103. What is a "hot mag" and how would you identify? What are the dangers?
When one or both of the mags are not properly grounded. Turn ignition switch quickly off and back on. If engine shut off, mags are properly grounded. If engine does not shut off, one or both of the mags are not grounded or always on (hot). Engine could start by turning or just moving the prop.
104. How does the cabin heat work in a single engine piston aircraft? What are the dangers?
A shroud is placed around the muffler. This captured "hot" air is sent in to the cabin where it is mixed with outside cold air. If the muffler were to develop a leak, carbon monoxide could enter the cabin.
105. Why would you want to maintain a Vy climb for a while after takeoff?
Vy gives you the highest altitude gain in the least amount of time – best rate of climb.
106. When might you need to slow down below maneuvering speed?
When encountering rough air or severe turbulence. Maneuvering speed (Va) is the speed at which the flight controls can be moved from stop to stop without bending (damaging) the aircraft. Remember Va – "abrupt controls".
107. What is the spin recovery procedure for your aircraft?
Verify ailerons neutral and throttle closed. Stop the rotation – apply full opposite rudder. Decrease the angle of attack – move control wheel briskly forward to break stall. Neutralize rudder and recover from dive.
108. Can you intentionally spin your aircraft according to the manufacturer limitations?
C172 - YES
109. Explain what you would do if a large aircraft departed just as you were coming in to land?
Land and stop before the point where the large aircraft lifted off of the runway.
110. What is the maximum allowable baggage you can put in the baggage compartment of your airplane?
120 Lbs.
111. What are the various anti- or de-icing components on your aircraft, and which one is each (anti-or de-icing?). Pitot Heat = should be used as anti-ice by turning on anytime there is visible moisture and the outside air temperature is +5°C or less. It could also be used as de-ice to remove ice.
112. What is the total fuel on your aircraft, and how much of that is useable?
C172 = 42 gallons, 38 gallons is usable
113. What kind of fuel does it take? What is the color of the fuel?
100LL / Blue or Ethanol Free Auto Gas
114. What is required to use auto-fuel? Can you mix auto-fuel and 100LL?
STC Permit – placard on top of each wing, clamp on pushrod tube and proper signoff in engine logbook.
115. Describe how the fuel gets to the engine.
Gravity flow from wing tanks to fuel bowl/strainer to carburetor.
116. How are the fuel tanks vented to allow for air to replace fuel that is used?
Main fuel tank vent on left wing adjacent to wing strut. Right wing tank is vented through left wing tank.
117. How much fuel reserve do we carry for VFR day? Night?
30 minute minimum – day, 45 minute minimum – night. My personal minimum is 1 hour reserve fuel.
118. How much oil does your airplane hold? Minimum/Maximum?
C172: 6 quarts minimum / 8 quarts maximum
119. How can you tell the minimum amount of oil you would need to start the engine and taxi around?
One-half what is marked on the dipstick. If your dipstick has 8 quarts stamped on it then 4 quarts would be the minimum.
120. What powers the flaps?
An electrically driven motor mounted in the right wing, control both flaps.

121. Would the engine quit if you lost electrical power?
NO, the engine electrical power is supplied by 2 magnetos.
122. How would you identify an electrical failure?
Loss of power to an electrically driven instrument or a popped circuit breaker.
123. What are the required instruments and equipment for day VFR flight?
91.205 VFR Equipment Requirements: **"TOMATOFLAMES"**
- TACHOMETER
 - OIL PRESSURE GAUGE
 - MAGNETIC DIRECTION INDICATOR
 - ALTIMETER
 - TEMPERATURE GAUGE
 - FUEL GAUGES
 - LANDING GEAR POSITION INDICATOR
 - AIRSPEED INDICATOR
 - MANIFOLD PRESSURE GAUGE (Altitude Engines)
 - EMERGENCY LOCATOR TRANSMITTER (ELT)
 - SAFETY BELTS/SHOULDER HARNESS (front seats after 7/18/78)
124. Could you fly the airplane if a piece of non-required equipment was not operational? If so, what would you need to do?
YES – place an "inoperative" placard/sign on the equipment
125. Could you fly the airplane if a piece of required equipment was not operational? If so, what you would need to do?
NO – place an "inoperative" placard/sign on the equipment and a "Do Not Fly" sign on the aircraft.
126. What are the night VFR equipment requirements?
TOMATOFLAMES + navigation lights, red or white anti-collision light, landing light – if operated for hire, adequate source of electrical power and spare fuses (if fuses are used).
127. Explain hypoxia and its symptoms/warning signs.
Oxygen deficiency to the brain. Headache, drowsiness, dizziness and a sense of well-being.
128. Explain hyperventilation and its symptoms.
An abnormal increase in the volume of air breathed in and out of the lungs. Light-headedness, suffocation, drowsiness, tingling in the extremities.
129. Explain the supplemental oxygen requirements. (91.211)
Pilot must have and use O2 for all flights above 12,500' to 14,000' for more than 30 minutes, at all times above 14,000', and must provide for all passengers above 15,000'
130. Explain the effects of excessive nitrogen in the blood. Why might this be significant for you as a pilot?
Excessive nitrogen in the blood – nitrogen narcosis, causes a "drunken-like" state. When breathing compressed oxygen under pressure as with SCUBA diving, the gases are forced in to your body under pressure. As pressure decreases with your ascent to the surface and with altitude gain, the excessive nitrogen is not able to diffuse out of the body slowly and is forced into your blood. A pilot or passenger who intends to fly after scuba diving should allow the body sufficient time to rid itself of excess nitrogen absorbed during diving. The recommended waiting times are: Flight Altitudes up to 8000': wait at least 12 hours after diving which has not required a control descent. Flight altitudes over 8000' and any controlled ascent dives: wait at least 24 hours after diving.
131. What would you do if you smelled exhaust fumes in the cockpit?
Be suspect of exhaust coming in from heat duct – shut-off/close heater valve. Open air vents. If severe, reduce power, open window and land as soon as possible.
132. What would you do about white smoke in the cockpit?
White smoke is usually electrical. Turn off battery to stop or reduce it.
133. What would you do about black smoke in the cockpit?
Black smoke is usually engine related. Reduce power and see if that helps. If not, you should prepare for emergency landing – engine out.

134. Why do you have to avoid alcohol and certain over-the-counter drugs with respect to flying?
Alcohol renders a pilot much more susceptible to disorientation and hypoxia. Small amounts of alcohol and low doses of certain drugs render the brain much more susceptible to hypoxia.
135. Explain the use of a personal checklist such as "I'm SAFE" to determine personal risks?
Personal, self-assessment checklists assist pilots in conducting preflight checks on themselves. The "I'm SAFE" checklist reminds pilots to consider the following: Illness, Medication, Stress, Alcohol, Fatigue and Eating.
136. What regulations apply and what common sense should prevail concerning the use of prescription drugs and medication?
The regulations prohibit pilots from performing crewmember duties while using any medication that affects the faculties in any way contrary to safety. The safest rule is not to fly as a crewmember while taking any medication, unless approved to do so by the FAA.
137. If you were overtaking a slower aircraft how would you pass? Would you change altitude and which side and why? Stay at the same altitude and pass him to the right where you can see him better looking out of your left window. Remember, aircraft on the right have the right-of-way.
138. If you were converging on a plane, who has the right of way?
Aircraft on the right have the right-of-way.
139. If you are on base and you see an airplane straight in on final, who has the right of way?
The aircraft on final approach has the right-of-way.
140. Where do Class A, B, C, D, E and G airspaces exist and show me them on a chart (if possible)?
Remember –
A is for "Altitude" – airspace above 18,000" – 100% positive control and IFR
B is for "Busy" – airspace shown with blue rings around major cities
C is for "Communicate" with ATC – airspace shown with magenta rings around smaller cities
D is for "Drum" – airspace around airports colored blue, operating CT, 4nm radius, surface to 2500' AGL
E is for "Everywhere" – airspace above 700' and 1200'
G is for "Ground" – airspace close to the ground, below 700' and 1200'
141. What do you need to get into Class A airspace?
An IFR clearance, An IFR equipped and certified aircraft and Instrument rated pilot.
142. What do you need to do to get into Class B airspace?
You must receive a clearance from ATC that states – "cleared to enter Class B airspace".
143. What do you need to get into Class C airspace? Class D?
Must have established radio communication with the associated ATC facility.
144. If you called Flint approach control facility to enter Class C airspace, and the controller responded with "Aircraft calling Flint, standby," could you enter the airspace? Why or why not?
NO because he did not call you by name therefore, you did not establish positive radio contact.
If he said: "N93191, standby", then the answer would be YES and you could enter.
145. If you are flying towards a class C airport and you suddenly lose communication, what do you do?
You could squawk 7600 and continue.
146. What is NORDO?
This stands for "NO Radio" and is an aircraft in which radio communication has been lost and is not communicating with ATC.
147. Is there a way to communicate if we lose our com radios?
YES – maybe. If you still have your NAV radio, tune them to a nearby VOR and turn the volume up. The flight service people may call you and say something like: "aircraft inbound to XYZ airport, squawking 7600, if you hear me IDENT". If you push your IDENT button, then they may give you instructions and/or directions to the airport and land. If this fails, you would enter the traffic pattern and blend in with the existing traffic and look for light signals from the tower – steady green is cleared to land. Steady red is not cleared to land. After landing and clearing the runway, blinking green is cleared to taxi.
148. What are the most common reasons for lost communication? Remedies?
Radio volume got turned down or muted, you tuned the wrong frequency, electrical failure and the push to talk wire broke. Try a second radio, try a handheld radio, try headset and push to talk from the copilot's side, try a hand held mike, see if your cell phone will work.

149. Where could you find some telephone numbers?
The Airport Facility Directory (AFD)
150. What is Flight Following and how do you use it?
A service offered by ATC (as work load allows) that will provide radar and traffic advisories for VFR cross country flights. Call ATC and tell them your position, type of aircraft, cruising altitude, your destination and ask for flight following.
151. What is a DF Steer? How do we ask for it?
DF Steer is a directional finding tool that is used by the flight service station. Contact the nearest FSS and ask for a DF steer. They will identify your location by a series of turns.
152. What do the elevation numbers mean on the sectional chart?
This is the minimum altitude to fly that will guarantee terrain clearance in the specific quadrangle. It may be as little as 100 feet.
153. Explain Military Operations Areas...where can you find information about specific MOAs depicted on your chart? These are areas of Military operations and training – both on the ground and in the air. You find the information and altitudes on the VFR sectional chart.
154. Can we make today's flight safely?
YES
155. Are there any NOTAMS for our flight today?
These are Notices to Airmen about a particular airport or area. Get them from FSS or DUATS.
156. If you were cleared to land and a Delta 767 is landing in front of you, how would you adjust your flight path and where would you touch down?
You would adjust your flight path to stay above his flight path and you would touch down beyond the point where he touched down
157. Why did you choose 4500 as a cruise altitude?
Because of the direction of flight, winds aloft and total distance.
158. Explain the hemispherical rule.
When flying above 3000' AGL – Easterly heading – fly at odd altitude, westerly heading – fly at an even altitude. Add 500' for VFR flight. Remember – east is least (odd), west is best (even).
159. How would you activate your flight plan once airborne?
Call Flight Service Station (FSS). Look for name and frequencies on VOR Identification Box.
160. What frequency could you use anywhere in the US to contact flight service to check weather and open or close your VFR flight plan? What is the name?
122.0 / Flight Watch
161. Explain how you arrived at your computed heading and groundspeed for the first leg of the trip.
Remember – $TC \pm VAR = MC \pm WCA = MH \pm DEV = CH$ (use formula on E6B)
162. Explain why you chose the checkpoints that you did.
At least 1 checkpoint every 10 to 15 minutes, easy to spot and identify.
163. How will you determine the active runway at your destination (an uncontrolled airport)?
Call unicom if available, listen for other aircraft, listen to ASOS/AWOS, fly over – look at wind sock
164. What if you call the unicom and nobody answers?
Listen for other aircraft, listen to ASOS/AWOS, fly over – look at wind sock
165. Where are we in the weight and balance envelope for takeoff? For landing?
Calculate specified W&B for takeoff and for landing after fuel has been burned.
166. If you had a choice of flying an airplane that was loaded to the front of the CG limit and an airplane that was loaded to the aft CG limit, which one would you rather fly?
The airplane that was loaded to the front so that I do not have to worry about stalling the aircraft. The airplane with the aft cg would be much easier to stall.
167. What is the name of the course line that you drew on your sectional chart?
The True Course
168. What are the dashed magenta lines on the sectional chart?
These are Isogonic Lines of magnetic variation. Add west/subtract east. Remember – east is least (subtract), west is best (add).

169. What kind of airspace does the solid magenta circles represent? Do you have to have a transponder to go through it? How about over it?
Class C airspace. Yes, you need a transponder to go through it and over it.
170. How can you tell quickly by looking at the sectional which airports have control towers?
Airports with control towers are colored Blue.
171. What are the numbers in Class C airspace that look like big fractions 50/25?
These numbers identify the Tops and the Bottom (floor) of the Class C airspace in that specific sector/area.
172. What kind of airspace does the segmented magenta circle represent as shown on the sectional chart at the Downtown Island Airport (DKX)?
Class E airspace – starts at the surface.
173. Can you purchase gas at the Lumpkin County Airport (9A0)?
NO – the absence of tick marks around the magenta airport symbol indicates that no services are available.
174. What is the blue line between 2 VOR's?
Victor Airway
175. What kind of airspace is a victor airway? What is the width of the airway?
Class E airspace starting at 1200' AGL – 8NM wide
176. What is identified on the sectional when 2 intersecting airways have arrows pointing towards the VOR? Can you use another close VOR to determine the intersection?
It is an intersection identified by the two VOR's – NO, the arrows point to the VOR's you must use.
177. Just south of KTYS is a large number 84 printed on the sectional? What does this mean?
84 degrees of longitude
178. What is the white band at the bottom of the northern part of the Atlanta sectional chart?
It identifies the start of the Atlanta Terminal Control Chart that would join this chart.
179. What kind of airspace is around the Blairsville (DZJ) airport?
Alert Area A-685 – Surface to 700' AGL - Extensive Low Altitude Rotary and Fixed Wing Aircraft Training Operations. This information is found on the upper flap of the sectional or by tapping anywhere within the airspace boundary using ForeFlight.
180. What is the magenta shading around airport for?
This shading identifies airports that have a published instrument approach procedure. The magenta shaded area is the "transition" area where Class E airspace is lowered to 700' AGL around the airport. This is done so that IFR traffic can stay in positive control down to 700' AGL.
181. What are the small gray lines on the sectional chart for?
Military Training Routes
182. What kind of airspace is Snowbird MOA? Do we need to worry about this?
Military Operation Area – Look it up on the sectional chart and you will see that it is airspace from 11,000' MSL to 17,999' MSL. NO, we do not need to worry about this as long as we stay below 11,000' MSL.