

CP Aviation Pre-Solo Cross Country Exam

This exam is to be completed OPEN book and all answers should be per the regulations, POH, and textbooks.

1. Describe the procedure to a VOR from an unknown position.

2. Describe the emergency procedures for the following conditions:
 - a. Low oil pressure: _____

 - b. Over-voltage light illuminates _____

3. The weight of oil is _____.

4. The weight of fuel is _____.

5. What is density altitude? How does it change aircraft performance?

6. What is standard pressure and temperature @ Sea Level, @ 5,000' and @ 10,000'?

7. What is the pressure altitude and density altitude at SZP if the pressure is 30.12 and the temperature is 32°C?

8. What would the ground roll be on takeoff (using the information from above) with no obstacle and with a 50' obstacle?

9. To compute moment for weight and balance, you need to:
 - a. Add all weights.
 - b. Multiply weight by moment.
 - c. Multiply weight by arm.
 - d. Multiply arm by CG.

10. As your airplane gets lighter (due to fuel consumption) how is the maneuvering speed (V_a) affected?
 - a. No change.
 - b. V_a becomes higher.
 - c. V_a becomes lower.

11. What special equipment, requirements, and pilot certificates are required for flight in Class B & C airspace?

12. Give a brief description of the following:
- 1) Prohibited Area

 - 2) MOA (Military Operations Area)

 - 3) Restricted Area

 - 4) Warning Area
13. When a pilot deviates from a FAR because of an emergency, a written report is required by the Administrator:
- a. Upon request only.
 - b. Within 48 hours.
 - c. Within 30 days.
 - d. Only in controlled airspace.
14. How do you determine the traffic pattern altitude at a destination airport?
15. To determine the direction to fly the traffic pattern at an airport not having a control tower, FSS or Unicom, you should:
- a. Call the closest tower in the area and ask.
 - b. Observe the tetrahedron.
 - c. Observe the segmented circle.
 - d. Observe the wind sock.
16. Surface winds reported by the tower are:
- a. True winds.
 - b. Winds corrected for deviation.
 - c. Magnetic winds.
 - d. Corrected for latitude.
17. Certain factors must be considered when selecting a VFR cruising altitude that conforms to regulations. After determining your True course, which of the following would be irrelevant in selecting your cruising altitude?
- a. The elevation of the terrain over which you fly.
 - b. The terrain clearance, which you plan to maintain.
 - c. Whether or not the flight is conducted on Federal Airways.
 - d. The magnetic variation in the area over which you fly.
18. Regulations state that when flying VFR, a pilot on a landing approach to a runway where a visual approach slope indicator (VASI, PAPI, etc.) and traffic control tower are in operation:
- a. May make an approach utilizing the VASI only if declaration of the intent is made to the tower.
 - b. May make an approach using any glide slope desired if the tower gives a landing clearance.
 - c. Will be authorized to use VASI only in conjunction with simulated ILS approaches.
 - d. Shall maintain an altitude at or above the VASI glide slope until a lower altitude is necessary for a safe landing, unless otherwise authorized by ATC.

19. What are the basic flight visibility and cloud clearance requirements for flight in controlled airspace below 10,000 feet MSL?
20. You are planning a cross country and flying over the mountains. What is the appropriate altitude when crossing terrain?
21. You can expect carburetor icing to be **least** probable when:
- The humidity is high.
 - The outside air temperature is around 70 ° F.
 - The outside air temperature is well below freezing.
 - The engine is running at low RPM.
22. In answer to your request for landing instructions, the control tower replies: "SKYHAWK THREE SEVEN BRAVO, MAKE LEFT TRAFFIC RUNWAY ONE THREE, REPORT DOWNWIND ABEAM. WIND ONE SIX ZERO AT ONE TWO." At the downwind abeam position, your magnetic heading and your position relative to the runway are:
- MH 310 °, SW of the runway
 - MH 130 °, NE of the runway.
 - MH 310 °, NE of the runway.
 - MH 130 °, SW of the runway.
23. The width of a federal airway from either side of the centerline is:
- 6 nautical miles
 - 4 nautical miles
 - 8 nautical miles
24. Pre-flight action, as required for all flights away from the vicinity of an airport, shall include:
- A study of arrival procedures at airports of intended use.
 - An alternate course of action in the flight cannot be completed as planned.
 - The designation of an alternate airport.
25. Except when necessary for takeoff or landing, what is the minimum safe altitude required for a pilot to operate an aircraft over congested airspace?
- An altitude of 500 feet above any person , vessel, vehicle, or structure.
 - An altitude of 500 feet above the highest obstacle with a horizontal radius of 1,000 feet of the aircraft.
 - An altitude of 1,000 feet above the highest obstacle within a horizontal radius or 2,000 feet of the aircraft.
26. A blue segmented circle on a Sectional Chart depicts which class of airspace?
- Class B
 - Class C
 - Class D

27. The ground controller clears you to "Taxi to Runway 17 via Golf, Alpha." With this clearance you...
- May taxi onto runway 17 and wait for takeoff clearance.
 - May use any taxiway to runway 17 and hold short of runway 17.
 - May cross all runways and taxiways except the assigned takeoff runway.
 - Must taxi on taxiway Golf, Alpha, and may not cross any active runway's on the way to Runway17 without further clearance and must hold short of runway 17.
28. The tower controller instructs you to "Line up and Wait, Runway 17." This authorizes you...
- To cross the hold-short line.
 - To taxi onto the departure runway.
 - To takeoff.
 - both A and B.
29. Assume a TAS of 90 knots, wind calm, and a cruising altitude of 6,500 feet. You want to be at 2,000 feet MSL 5 miles from your destination. When should you begin your descent?
30. At your destination you hear on the tower frequency that Beech Baron has an emergency. It has an engine fire and will land in front of you on Runway 17. The Baron lands without problems, damage, or injury. How much time does the Baron pilot have to notify the NTSB of this incident?
- Immediately.
 - Seven days.
 - Ten days.
 - Only if requested
31. When must the Baron pilot submit a report to the nearest NTSB field office?
- Immediately.
 - Seven days.
 - Ten days.
 - Only if requested.
32. What is the power setting, fuel consumption and TAS for the following:
- 65% power, 8,000 ft., standard temperature
 Manifold pressure _____ RPM _____
 Fuel consumption _____ TAS _____
- 75% power, 7,500 feet, standard temperature
 Manifold pressure _____ RPM _____
 Fuel consumption _____ TAS _____
33. Short field take off, maximum gross weight, 0 KTS wind, for
- | | |
|----------------------|-----------------|
| Sea Level 15°C | 5,000 ft., 40°C |
| _____ feet roll | _____ |
| _____ 50 ft obstacle | _____ |

34. To enter a Class D airspace, an airplane must have:

Class C:

35. VFR cruising altitudes are required above what minimum altitude:

36. Describe the manual mixture leaning procedure:

37. Work this Sample Range Problem:

Destination: Apple Valley (KAPV)

PA = 7,500 Ft. TAS = _____ Kts Fuel Stops _____
TEMP = +15° GPH = _____ Fuel Required _____
WIND = 090°/20 Kts DAY VFR Reserve _____ Fuel Remaining _____

38. How does center of gravity alter stall speed and stability, forward vs aft vs over gross weight?

39. Empty weight: _____ Useful Load: _____
Maximum takeoff weight: Landing weight:
Center of gravity range (max weight): _____

40. At the bottom of this page, work a sample weight and balance problem. Carry maximum passengers at 170 lbs. each, max. baggage and figure out how much fuel you can have so that you are not over gross weight. Also show what the CG is.

Weather Questions

- 1) What type of clouds and precipitation are associated with stable air?
- 2) What type of clouds and precipitation are associated with unstable air?
- 3) Illustrate the following as seen on a surface prognostic chart:
 - i) Cold front:
 - ii) Warm Front:
 - iii) Trough:
 - iv) Occluded front:
 - v) Stationary Front:
- 4) True or False: Radar detects the current cloud coverage.
- 5) What can we learn from the temperature/dew point spread?
- 6) What is the recommended distance pilots should stay away from any thunderstorm?
- 7) What causes wind?
- 8) Describe what a squall line.
- 9) What layer of the atmosphere is most weather formed?
- 10) As temperature increases what happens to the density of the air?
- 11) What is a temperature inversion?

12) Name three types of fog and when and where you might encounter them.

13) What is special VFR?

14) Can we use Special VFR?

15) How many times a day is a TAF updated, and what area is a TAF valid for?

16) How many times a day is a FA updated, and what area is a FA valid for?

17) What is a METAR and how often is it updated?

18) Name three sources to obtain online weather information.