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BFR QUESTION PACKET

Client Name _____ Date _____ Completion Success _____

GENERAL & LIMITATIONS

1. Engine
 - a. What engine powers your plane?
 - b. What is the rated horsepower?
 - c. How many cylinders are installed and how are they opposed?
 - d. How is the engine aspirated?
 - e. How is the engine cooled?
 - Internally?
 - Externally?
2. Oil
 - a. What grade of oil should be used for the (type)?
 - b. What is the minimum operational oil level?
3. What is the minimum static RPM of the (type)?
4. Fuel
 - a. What is the total usable fuel quantity?
 - b. What is the total usable fuel quantity per wing?
 - c. How much fuel is unusable per wing?
 - d. What is the total fuel quantity
5. What fuel grade must be used, and what color should it be?

6. What is the max take off weight?
- 7.
8. What category airplane is the (type), and are spins prohibited in this model?

9. Speeds

VS0 _____ VS _____ BestGlide _____ Va _____ VFE _____

VY _____ VX _____ VNO _____ VNE _____

Threshold crossing speed _____

What is the maximum demonstrated crosswind component?

NORMAL & EMERGENCY PROCEDURES

1. What is the max allowable magneto drop during run up?
2. What steps would you follow to deal with an electrical undervoltage indication in flight? What could trigger this problem?
3. Describe the go around procedure?
4. Describe the pilot actions following power loss in flight?
5. Describe the pilot action to be taken if oil temperature is rising while oil pressure is falling? What is probably happening?
6. Describe short field take off procedure?
7. How can a pilot suffer from Carbon Monoxide poisoning in flight. What symptoms will a poisoned pilot begin to have? What action should be taken.

8. Describe how a pilot confirms if they have an adequate fuel supply? How much can a pilot rely on the fuel gauges? When are these gauges legally required to be fully accurate?

9. What is the minimum fuel reserve for Day VFR? For Night VFR?

PERFORMANCE

1. What is stall speed in a 45 degree bank with flaps up?
2. What are the shortfield take off and landing distances from a 500 ft pressure altitude at 30 degrees Celsius?
3. At a pressure altitude of 6000, at standard temperature at 70% power:
 - a. State the fuel flow.
 - b. State the TAS.
 - c. State the power setting.
4. What happens to performance as density altitude increases?
5. What is the density altitude?
6. How many G's are incurred at 60 degrees of bank, and what happens to load factor as the bank angle increases beyond 60?
7. Describe procedures for departing behind a large aircraft that has just:
 - a. Departed
 - b. Landed
8. If TAS = 115kts
Winds Aloft = 330 degrees @ 25kts
True course = 25 degrees
Variation = 11 West

Then Ground Speed =
WCA =
Mag Course =
Mag Heading =

15. How much fuel, time, and distance covered is needed to climb from a field at 500 foot pressure altitude to 4500 foot pressure altitude?

16. Calculate and attach a weight and balance for N771TR for the following conditions:

| | | |
|-----------------------|---|---------|
| Pilot | = | 165 lbs |
| Copilot | = | 125 lbs |
| Rear passenger | = | 180 |
| Bags on rear Seats | = | 15 lbs |
| Cargo in baggage area | = | 40 lbs |
| Full fuel and oil | | |

DESCRIPTION

1. What is the purpose of the alternator? What is its relationship to the battery?
2. What is the function of the overvoltage regulator or alternator control unit?
3. In what phases of flight should you refrain from switching fuel tanks?
4. At what interval should you change fuel tanks?
5. Magnetos:
 - a. What is a magneto?
 - b. How many magnetos are on the engine?
 - c. How many spark plugs are on the engine?
 - d. If you loose one magneto how many plugs will become inoperative and which ones?

6. Describe the effect of the following controls upon engine roughness.
 - a. Mixture
 - b. Carb heat
 - c. Fuel pump
 - d. Throttle
 - e. Fuel Selector
 - f. Magnetos
7. Is there any relation between the electrical system and engine roughness?
8. When are you most likely to get carburetor icing? What are the symptoms?
9. What pilot action can be taken to remedy rough magneto drops during runup.
10. What action should be taken if the roughness can not be eliminated through the above-mentioned procedure?
11. Fuel Drains
 - a. Where are the fuel drains located?
 - b. How many are there?
 - c. When must they be drained?
 - d. What constitutes a failed test sample of fuel and what preflight action does this entail?
- 12.
13. How do you get rid of carburetor icing?
14. What indications will the use of alternate static provide?

AERODYNAMICS

1. Explain the venturi effect or Bernoulli principle, and how does it apply to a wing?
2. Define Angle of Attack
3. Define Critical Angle of Attack.
4. Does critical angle of attack ever change?
5. Does stall speed change?
6. Does wing loading directly affect stall speed?
7. Do bank changes, weight changes, and coordination all affect wing loading?
How?
8. What happens to maneuvering speed as weight increases? Is this an advantage and why?
9. What is the purpose of flaps?
10. What happens to load factor as bank increases?
11. What happens to stall speed as load factor increases?
12. Describe the spin recovery procedure.
13. Define Ground Effect, and explain why it is significant.
14. Under what three conditions must a pilot counteract left turning forces? How?
What are the four causes for these three conditions? Explain why they occur.

FEDERAL AVIATION REGULATIONS

1. What is the lowest altitude that an airplane can operate over a congested area?
Uncongested area?
2. Describe right of way:
 - a. Airplane vs glider or airship
 - b. Airplane vs airplane on the right
 - c. Airplane vs airplane head on
 - d. Airplane vs airplane lower in the pattern
3. Describe the new ADIZ procedures for a flight from KFME to KFDK and back.
4. What is the VFR minimum visibility and cloud separation requirement that is common to class E below 10,000 feet, D, C, day and night and Class G at night?
5. What are notams and how do they affect pilots?
6. What pilot documents must be on your person when in flight?
7. What inspections must be found to be in compliance during preflight?
8. List the required VFR day equipment as set forth by the FAA that applies to the (type).
9. Describe daytime intercept procedures. What frequency should you monitor to reduce the chance of being intercepted and why?

10. Describe how a pilot tracks a VOR radial with normal sensing, and how to avoid reverse sensing.
11. Define LAHSO procedures.
12. What is ALD, where can you obtain that information?
13. Can you refuse LAHSO instructions?
14. Can student pilots accept LAHSO instructions?
15. Can you go around in the event of a botched approach?
16. What do the following light gun signals mean?

In the air

On the ground

- a. Flashing Red
- b. Steady red
- c. Flashing Green
- d. Steady Green
- e. Flashing White
- f. Alternating Red and Green

CHARTS

1. Where is the nearest Class B airspace to your base airport, and how do you avoid it laterally and vertically?
2. Where is the nearest TFR, restricted area, prohibited area, or FRZ and how do you stay out of it?

3. Is mode C required to be operational for a flight to or from KGAI or KFME?
4. What frequency is

| | |
|-----------------------|-----------------------|
| For KGAI based pilots | For KFME based pilots |
| 121.6 | 121.725 |
| 128.7 | 119.7 |
| 128.275 | 123.92 |
| 123.075 | 123.05 |
5. What is the difference between the following frequencies? (Hint, look on a VOR box on your map)
 - a. 122.0
 - b. 122.2
 - c. 122.1R
8. How do you establish contact with a Flight Service Station via a remote control outlet?
9. What airplane documents must be onboard?
10. From looking at a chart, how do you know if any of the runways at an airport are right traffic?

WEATHER

1. Does AWOS report ceilings in AGL or MSL?
2. What does a close temperature dewpoint spread imply?
3. What is the difference between relative humidity and dewpoint?
4. What type of weather is associated with fast moving cold fronts?

5. What winter icing hazard is associated with arriving warm fronts?
6. At what time of day is fog most likely?
7. What affect does frost have on an airplane that is departing?
8. What ingredients are needed for a thunderstorm to develop?
9. What is a microburst, and what is its relationship to thunderstorms?
10. What hazards are created by a thunderstorm and how far should an airplane be piloted away from a severe cell?
11. What are airmets?
12. What is airmet:
 - b. Tango
 - c. Sierra
 - d. Zulu
13. What is a sigmet?
14. What is a convective sigmet?
15. (IFR pilots) What temperature range is conducive to icing when IMC?
16. (IFR pilots) What technique should be used to approach to land after an inadvertent icing encounter?

NAVIGATION

1. Compare and contrast an MOA vs a Restricted Area, vs a Prohibited area

2. When attempting to enter Class B airspace what do the following ATC transmissions imply?
 - a. “771TR, you are radar contact 30 north of the JFK VOR.”

 - b. “1TR, you are radar contact 5 north of Gaithersburg, proceed on course to Easton.”

 - c. “1TR, you are radar contact 5 north of Easton, you are cleared as requested to Gaithersburg via the Fort Meade transition at 3500.”

 - d. “771TR you are cleared into the Class Bravo. Proceed on Course.”

 - e. “Tobago TR, you are cleared into the ADIZ, remain clear of the Class Bravo. Proceed on course to Fort Meade.”

3. What do the following instructions mean, and what responsibilities do they imply to you?
 - a. “771TR, right vector [or (turn right)] 150 degrees.”

 - b. “Tobago 1TR, resume normal navigation/own navigation.”

- c. “November 1TR, radar service terminated. Frequency change approved. Squawk 1200.”
- d. “November 1TR, radar service terminated. Frequency change approved. Keep your code until you land.”

SECTIONAL AND TAC CHARTS

1. Using the index on the sectional chart find:
 - a. The ATC frequency while transitioning the Eastern Shore over Easton airport VFR at 3000 feet.
 - b. The times of operation and the altitude of R4006 on the Maryland Eastern Shore
2. Draw the symbol for
 - a. A tall flashing antenna.
 - b. A short flashing antenna.
 - c. A short unlit antenna.
 - d. A misc.point. ie: a golf course, prison, trailer park, hospital, factory, etc.
 - e. A public hard surface airport.
 - f. A private soft field.
 - g. A public soft field.
 - h. A public hard surface field with services.
 - i. An airport beacon.

- j. Train tracks.
 - k. Small roadway.
 - l. Major roadway.
 - m. Maximum elevation figure (what color is it).
 - n. Variation line (what color is it).
 - o. A concentrated population area (Color).
 - p. A small hamlet, township or agglomeration.
 - q. Restricted Area (color).
 - r. Prohibited Area (color).
-
- 3. Why are ATC sector frequency boxes listed on a Sectional around class C airspace but not for Class B airspace?
 - 17. What does a white box around Class B airspace mean on a Sectional chart?
 - 5. What is the ceiling of the Martinsburg Class D?
 - 6. What is the ceiling of the Atlantic City class C
 - 7. What is the Class E ceiling and the shelf floor of the Potomac Class B over KFME?

7. What is the difference between tower, CTAF, and Unicom frequency at a towered airport?
8. What are those frequencies at Wilmington?
10. What is the Maximum Elevation Figure for?
5. At what altitudes is it recommended that pilots use supplemental oxygen?

AEROMEDICAL

1. What is hypoxia? When does it occur. What pilot actions should be taken?
2. What is hyperventilation. When does it occur. What pilot actions should be taken?
18. What is the danger of scuba diving and flying soon after?