

**EVERYTHING YOU NEED TO KNOW
FOR INSTRUMENT ORAL**

1. Be able to identify, define and use the following abbreviations:

AGL	ALS	ASR	ATC	CAS					
DH	DME	FAA	GS	HIRL					
IAS	ICAO	IFR	ILS	IM					
INT	LDA	LIFR	LMM	MAA					
MCA	MDA	MEA	MM	MOCA					
MRA	MSL	MSA	NDB	ADF					
NOPT	OM	PAR	RBN	REIL					
RVR	RVV	TAS	TDZL	TVOR					
VFR	MVFR	VHF	VOR	VORTAC					
Va	Vf	Vfe	Vne	Vno	Vr	Vs	Vso	Vx	Vy

2. How often does the pitot-static system and altimeter have to be checked?
3. What are the minimum equipment requirements for IFR flight?
4. Where does Class A airspace begin? What equipment is required? Any other requirements?
5. What is the MSA for IFR flights in mountainous and non-mountainous terrain?
6. What are the only two AGL altitudes listed on an approach plate?
7. What is the value of each dot on the VOR face in reference to ILS approaches?
8. How much of an upward deflection of the glideslope indicator (in terms of dots) is allowed at the middle marker before calling a missed approach?
9. In reference to an NDB, what is a bearing and what is a course?
10. What procedure should you follow when you have diverted from your destination in bad weather and your alternate has gone below alternate minimums?
11. What is the transponder procedure for lost communications?
12. How is TAS calculated?
13. How do you determine whether or not an alternate is needed?
14. What are the minimum alternate requirements?
15. Describe each of the following, specify what information they contain, their duration, and their frequency of issue:
FA FT SA SP RS PIREP
16. Explain the difference between an AIRMET, a SIGMET, and a CONVECTIVE

SIGMET.

17. For each of the following types of charts....describe what they are, how they are used by pilots, how often they are issued, observed, or forecast, and what their period of forecast/validity is:

Surface Analysis	Weather Depiction
Radar Summary	Significant Weather Prognostic
Composite Moisture Stability	Sever Weather Outlook
Constant Pressure	

18. Explain in full how a thunderstorm develops, what fronts or systems they are usually in conjunction with, and what hazards may be encountered in relation to them.
19. Explain in detail the difference between stratus and cumulus.
20. What is the International Standard Atmosphere (ISA) at Sea Level? Hg? Mb? *C? *F? and the standard lapse rate of each per 1,000'?
21. How often are low enroute charts published? Approach plates? Sectionals? Airport/Facilities Directories?
22. How do we know our charts are current? (trick question)
23. #23 has been moved to #162 answer it there not here.
24. Explain the difference between the blue, green, and brown airports on a low enroute chart.
25. Why are some triangles (low enroute chart) solid and others are not?
26. How do you know if DME may be used to identify an intersection?
27. How do you determine terrain/obstacle clearance off an airway?
28. What is the difference between an FAF and an FAP?
29. Where is the FAF on a precision approach? non-precision?
30. Explain the meaning of HAA and HAT. How are they different? Where are they found?
31. What are the different approach categories and how are they determined?
32. On a circling approach, what area of clearance are you guaranteed?
33. When is descent below MDA/DH allowed?
34. Identify the components of a precision approach.

35. What is the "runway environment"? How far can you descend if you only have the approach lights in sight?
36. Why do some approaches have numbers (ex. VOR 13) and others have letters (ex. VOR-A)?
37. How closely aligned with the runway centerline does an approach have to be to be considered "straight-in"?
38. Describe an LDA approach and an SDF approach and explain the difference between the two.
39. How would a tailwind effect the timing of a non-precision approach? A headwind?
40. Describe a contact approach and a visual approach and explain the difference between the two (who can call for each, visibility/ceiling requirements, etc).
41. What is a shuttle?
42. Name the required instruments and equipment for an IFR flight.
43. At what altitude is Mode C required? What type(s) airspace?
44. Describe in full the procedure for lost communications. Include altitude, route, clearance limit, holding, approach, squawk, times, etc.
45. What reports are required by the FAR's for IFR flight?
46. Name the types of VORs and explain the differences and ranges between them.
47. Name and describe the various limitations/problems/errors with the ADF/NDB.
48. List and describe the various type of VOR tests and tolerances for each.
49. What are the VHF and UHF antennas on the plane? (if any)
50. Describe in detail, the problems/errors of the magnetic compass.
51. If using the magnetic compass on a heading of east and turning to a heading of north, what heading would you start your roll-out on, how did you determine that heading?
52. What is the difference between de-icing and anti-icing equipment? Does your aircraft have either one? If so, what is it? How does it work?
53. What is the maximum amount of error allowed in the altimeter to make an IFR flight?
54. What action, if any, is required after the loss of vacuum instruments in flight?

55. What documents must be on board the aircraft for all IFR flights?
56. In reference to IFR flights, are we referring to:
 - a. flights in actual IMC
 - b. flights under simulated IMC
 - c. flights on an IFR flight plan
 - d. all of the above
 - e. none of the above
 - f. some combination of the above (if so, what?)
57. What are the recency of experience requirements for IFR flight? With passengers?
58. What is the difference between RVR and RVV?
59. Explain what is meant when a pilot is told "cruise 6,000".
60. What are the four/five approach segments of an IFR approach and where does each begin? Are there any exceptions?
61. Under what circumstances, if any, would a Procedure Turn not be used?
62. What is the procedure for "picking up" an IFR clearance at an uncontrolled airport? What is the name for this type of clearance? Is there more than one way to do it? Is it required that you maintain VFR until establishing radio contact with ATC?
63. How far offshore does U.S. airspace extend?
64. What is implied if no clouds or visibility are reported on ATIS? What is implied if no wind or visibility is reported in the hourly weather report? In the terminal forecast?
65. Where is the VOR COP (changeover point) on most airways? Is it labelled? If so, how?
66. Can approach control clear you below the MEA when enroute?
67. What can a pilot do if his IFR currency has lapsed?
68. What has the FAA deemed an "appropriate safety pilot"?
69. What is considered "instrument flight time" by the FAR's? Where would you find that information?
70. What certificates must a pilot carry in his personal possession for an IFR flight?
71. What are the fuel requirements for IFR flight? VFR?

72. Is it required that an alternate be listed when filing IFR? When is an alternate required? What are alternate minimums?
73. As PIC, can you allow the operation of a portable electronic device aboard the aircraft for VFR flight? IFR? Is a cellular phone permitted to be used aboard an aircraft? Why or why not? When and/or when not?
74. How often must your VOR be checked to be legal for IFR flight? VFR?
75. At what point can you cancel your IFR flight plan?
76. What is the method for closing an IFR flight plan? VFR?
77. What are the minimum weather requirements for takeoff under FAR Part 91 for IFR flight? Does it matter what kind of airport it is? If so, describe the requirements at the different types.
78. Explain in detail the difference between MDA and DH.
79. How wide is an airway? What part of the airway should you fly on? When, if ever, should you deviate from that part of the airway? (think about this one IFR and VFR)
80. If flying IFR how do you choose your cruising altitude? If VFR? At what altitude do cruise altitude rules begin (hint: it's AGL)? How much separation will that allow you between traffic in the same direction? Opposite direction traffic? Circle the correct option on each line to show whether it's VFR or IFR and whether it's eastbound or westbound.

5,500'	-----	VFR	-----	IFR	-----	EASTBOUND	-----	WESTBOUND	-----
5,000'	-----	VFR	-----	IFR	-----	EASTBOUND	-----	WESTBOUND	-----
4,500'	-----	VFR	-----	IFR	-----	EASTBOUND	-----	WESTBOUND	-----
4,000'	-----	VFR	-----	IFR	-----	EASTBOUND	-----	WESTBOUND	-----
81. Name the methods of identifying the outermarker.
82. How often must the transponder/Mode C be checked?
83. Describe your situation at cruise if your clearance specifies "VFR ON TOP".
84. Is an alternate static source required by the FAR's? If selected during flight, how will it effect the instruments? Which one(s)?
85. Is a pitot heater required by the FAR's? If used, how will it effect the instruments? Which one(s)?
86. Explain the difference in the following clearances as related to an IFR altitude

assignment:

"November 12345, maintain six thousand feet."

"November 12345, cruise six thousand feet."

87. What inspections must be performed on the aircraft to be operated IFR? When are those inspections due?
88. Discuss SIDs and STARs. What are they? Where do you find them? How do you use them? What is their purpose? etc....
89. Assume you are IFR outside of radar environment, what radio reports must be automatically transmitted to ATC even without their request? (Hint: there are 12)
90. What is the procedure if you experience **TOTAL** electrical failure (Nav, Comm, and any electrical instruments)?
91. Explain the following enroute chart symbols:
 - a. Flag with the letter R in it
 - b. Open Triangle
 - c. Closed Triangle
 - d. |---- (solid, found on an airway at an intersection)
 - e. Box with a number in it below an airway
 - f. One number over another on an airway
 - g. Race track symbol
 - h. A * next to numbers above an airway
92. List as many ways as you can how to identify an intersection.
93. Is a VSI (Vertical Speed Indicator) required for IFR flight?
94. What force keeps the gyro spinning and in a fixed position resistant to external forces?
95. What is the tilting or turning of a gyro in response to pressure called? What problems may that lead to? When is it most likely to occur?
96. Which instrument(s) display both pitch and bank information?
97. Which axis is the heading indicator responding to?
98. What is a standard-rate turn? If the turn coordinator was INOP, could you still fly a standard-rate turn? How?
99. What would you do to the bank angle to maintain a standard-rate turn while

decreasing airspeed?

- 100 What is/are the direction-seeking instrument(s) in your aircraft?
- 101 What is the angular distance between the true and magnetic poles known as?
- 102 How do you correct for magnetic deviation?
- 103 Does "magnetic dip" increase or decrease at the poles?
- 104 Where are acceleration/deceleration errors most apparent?
- 105 Turning errors are most apparent when turning to or from which headings?
- 106 Which instrument(s) work off the pitot tube? Static Port?
- 107 Is static pressure available to all pitot-static instruments?
- 108 Explain the difference between TAS, IAS, CAS, and GS.
- 109 Explain the difference between Absolute Altitude, Density Altitude, Indicated Altitude, Pressure Altitude, and True Altitude. Will these all be the same? If not, why not? If so, when and how?
- 110 If you fly into an area of low pressure from an area of high pressure, without resetting your altimeter, what will your actual altitude be in relationship to your indicated altitude? Explain.
- 111 What conditions determine the pitch attitude required to maintain level flight?
- 112 What is/are the pitch instrument(s)?
- 113 During straight-and-level flight, what is usually considered to be the primary instrument for pitch? Bank? Power?
- 114 What information does the VSI provide? How reliable is it?
- 115 During an airspeed change in straight-and-level flight, which instruments are primary for pitch, bank, and power, respectively?
- 116 To enter a level turn from straight-and-level flight, what is the initial primary bank instrument?
- 117 Once established in a standard-rate turn, which instrument is primary for bank control? Pitch?
- 118 Rate of turn varies with changes in TAS and _____?
- 119 Where can you find the locations for VOT, VOR ground, and VOR airborne

checkpoints?

120 What indication will you receive when a VOR station is shut down for maintenance?

121 When flying from a VOR station, a full-scale CDI (Course Deviation Indicator) deflection means that you are at least _____ from your desired radial.

122 If you are 30 miles from a VOR and the CDI is deflected two dots from center, approximately how far are you from your selected radial?

123 Assume you are flying perpendicular to the 090' radial of a VOR on a heading of 360' and you note that two minutes elapse between the 090' and 080' radials. If your groundspeed is 120 knots, your distance from the station is approximately ____ NM.

124 Based on the previous question and a fuel consumption rate of 15 gallons per hour, how much fuel is required to fly to the station?

125 What is considered station passage (VOR)?

126 Fill in the blanks concerning the ADF:

<u>Magnetic Heading</u>	<u>ADF Indicator</u>	<u>Bearing to Station</u>
240	060	_____
190	_____	085
030	_____	165
_____	315	275

127 Where does DME have the least error between ground distance to the VORTAC and the displayed distance?

128 When only the DME portion of a navaid is operating, the station identifier is transmitted approximately how often?

129 At groundspeeds of 150 knots or less, the approximate lead to intercept a DME Arc from a radial is _____.

130 As a guide for heading corrections when you fly a DME Arc, how many degrees of heading change should you use for each 1/2 mile deviation from the desired arc?

131 What are the two highest priorities of the ATC system?

132 How far in advance should you file your IFR flight plan?

133 Can you "pick up" an IFR clearance from ARTCC? FSS?

134 When is an IFR flight plan deleted from the ARTCC computer if not "picked up"?

135 If asked by ATC to reduce speed, to what speed are they referring? (knots, mph,

IAS, GS, etc)

- 136 If on an IFR flight plan, ATC will advise you of all other traffic. True or False?
- 137 Who are center weather advisories issued by?
- 138 A safety alert is issued when, in the controller's judgment, an aircraft is in unsafe proximity to what?
- 139 Who relays IFR clearances to pilots departing uncontrolled airports? controlled?
- 140 Who controls the airspace within a five-mile radius of a controlled airport? What is that airspace called? What is the upper limit of that airspace? What do you need to enter that airspace?
- 141 Who handles the transition of aircraft between the control tower and ARTCC?
- 142 Who controls all enroute IFR air traffic?
- 143 What is Stage III? Where is it found? Is participation mandatory?
- 144 If a control tower and a FSS are on the same airport, what type of service does the FSS provide after the tower closes?
- 145 In the event you deviate from a clearance due to an emergency, what action (if any) must you take? Explain. Where would you find that information?
- 146 If ATC provides you with priority service because of an emergency, what action (if any) must you take? Explain. Where would you find that information?
- 147 If you depart from an airport outside of controlled airspace during IFR conditions, when must you file an IFR flight plan and receive clearance?
- 148 True or False? ATC will not issue a SID unless you request it.
- 149 What type (if any) clearance will allow you to execute an instrument approach at your destination airport?
- 150 What is a composite flight plan?
- 151 What is the difference between yellow arrows and yellow chevrons at the end of an airport runway?
- 152 How far into the approach area do approach lighting systems for nonprecision instrument runways normally extend?
- 153 At an airport with a VASI:
- it is there for convenience
 - you must fly a 3' glide path

- c. you must stay at or above the glide path
 - d. none of the above (if none of the above....give your answer)
- 154 When the runway lights have variable intensity, how is the intensity set and by whom?
- 155 If you remain at or above the VASI glide path, what are you assured of? Are all VASI paths 3'?
- 156 What may you assume if the rotating beacon is on during daylight hours?
- 157 What is the maximum airspeed for reciprocating-engine aircraft in:
- Class D airspace
 - Class B airspace
 - Under Class B airspace
 - Through VFR corridor in Class B airspace
 - Airspace below 10,000'
- 158 Where are warning areas?
- 159 Who is responsible for collision avoidance in Alert Areas?
- 160 Who would you call to find out if an MOA is active? Would it effect you if you were on an IFR flight plan?
- 161 How might you know if the military operations on an MTR are IFR or VFR?
- 162 Explain in detail the following types of airspace and how they effect IFR flights:
- | | | | | |
|---------|------------|---------|------------|---------|
| Warning | Restricted | Alert | Prohibited | ADIZ |
| DEWIZ | Class A | Class B | Class C | Class D |
| Class E | Class G | TRSA | | |
- 163 Where is it required that a transponder have altitude encoding capabilities?
- 164 In what publication would you find:
- FDC NOTAMS?
 - FSS telephone numbers?
 - Preferred IFR routes?
 - VOR receiver checkpoints and VOT facilities?
- 165 What is the term for the route that provides a transition from the enroute structure to the approach structure?
- 166 What is the Missed Approach Point (MAP) for a precision approach? non-precision? Under what other circumstances may you be "forced" to shoot a missed approach?

- 167 Are commercial broadcast stations considered reliable nav aids?
- 168 How close do you have to be to the VOR station for ATC to assign the MOCA as your assigned altitude?
- 169 What is the significance of the MAA?
- 170 If a MCA is not published at a fix where the MEA increases to a higher altitude, where does obstruction clearance normally require you to begin your climb in relation to the fix where the change occurs?
- 171 What does the frequency 122.1R over a VOR box indicate?
- 172 What are the normal minimums for an ILS approach with all components operative?
- 173 When a compass locator is used in conjunction with an ILS, where is it normally found?
- 174 Is it legal to fly an ILS in IMC with an inoperable glide slope? Why/why not?
- 175 What corrective action, if any, should be taken if on the centerline of the localizer and the glide slope but your airspeed is too high? What consequence, if any, would you suffer if no corrective action were taken?
- 176 What are the types of precision and non-precision approaches? Identify what type each is.
- 177 When flying a holding pattern with the outbound time being one minute and twenty seconds (1:20 or :80) and the inbound leg being thirty-eight seconds (:38) which leg would you correct and how?
- 178 In what distance from the airport should you normally complete a Procedure Turn?
- 179 If you are flying a circling maneuver to the favored runway and the visibility is at or above the required minimums, when can you begin your descent from MDA?
- 180 What action(s) should you take after declaring a missed approach due to weather?
- 181 Is DME required for an approach labelled VOR DME RWY 27?
- 182 What are VDPs (Visual Descent Points)? Where are they found? How and why are they used?
- 183 How would you know if nonstandard alternate minimums apply to an airport? What symbol, if any, denotes that? How would you find out what the minimums were?

- 184 Do IFR takeoff minimums apply to private aircraft operating under FAR Part 91?
- 185 What is the standard IFR takeoff visibility minimum?
- 186 What climb rate are published IFR departure procedures based on?
- 187 What is the recommended procedure if you do not wish to use a SID?
- 188 What is required in order for you to be able to accept a SID?
- 189 Compliance with a published IFR departure procedure ensures you of obstacle clearance to what altitude?
- 190 Is an IFR departure procedure always included in your IFR clearance (trick question)?
- 191 During an IFR departure from a controlled field, when should you contact departure control? From an uncontrolled field?
- 192 When landing at a controlled field, when should you contact ground control?
- 193 What information should you provide in your initial contact with departure control after leaving a controlled airport?
- 194 What does the phrase "radar contact" mean?
- 195 After a controller advises, "radar contact", he will provide radar flight following. True or False? Would that include terrain and obstruction clearance?
- 196 What is meant by the term "resume own navigation" after being vectored to an airway?
- 197 If you are planning a departure from an uncontrolled airport, and you cannot depart by the clearance void time, how long do you have to notify ATC? What action, if any, may be taken by ATC if you do not contact them in that period? Who is responsible for doing it and who is responsible for paying for it?
- 198 If you are planning a departure from an airport that only has a FSS, who should you obtain your clearance from? When?
- 199 What minimum rate-of-climb is required when flying IFR? What action, if any, must you take if you cannot maintain at least that rate?
- 200 What is the recommended procedure for changing altitudes when flying on a Victor?
- 201 What is the recommended procedure for changing altitudes in VMC on an IFR clearance, on a Victor airway?

- 202 When operating on an IFR clearance in VMC, who is responsible for collision avoidance? Pilot or Controller or Other Aircraft?
- 203 What is the recommended procedure if you can not establish communications on a newly assigned frequency?
- 204 If you are operating on an IFR flight plan, in a non-radar environment, on a direct course that is not an established airway, when (if at all) must you report to ATC? If on a VFR flight plan?
- 205 What reports are you required to make when you are operating on an IFR clearance specifying VFR-on-top in a non-radar environment?
- 206 You must advise ATC whenever your true airspeed changes by _____ knots/mph or _____ % whichever is greater.
- 207 If your filed route of flight requires you to penetrate an active Restricted Area, what action, if any, will ATC take? Are you permitted through this area?
- 208 Which way are the turns in a standard holding pattern?
- 209 Which way are the turns in a standard traffic pattern?
- 210 Identify each of the following as either.....
- A. Compulsory in a non-radar environment
 - B. Compulsory regardless of radar service
 - C. Non-compulsory
- ___ "ESTABLISHED IN THE HOLDING PATTERN AT 17.....11,000."
- ___ "DEPARTING HOLDING PATTERN AT 47"
- ___ "LEILA INTERSECTION AT 14, 11,000 HOLDING, REQUEST FURTHER CLEARANCE."
- ___ "VFR ON TOP, CLIMBING TO 12,500"
- ___ "BE ADVISED....TRUE AIRSPEED CHANGED FROM 130 TO 150 KNOTS"
- ___ "VOR INBOUND"
- ___ "LEAVING 7,000 FOR 12,000"
- ___ "LEVEL 10,000"
- ___ "MISSED APPROACH, REQUEST CLEARANCE TO WICHITA"
- ___ "LAKELAND AT 11, 7,000, IFR, ORLANDO 30, DAYTONA BEACH NEXT"
- ___ "EXPERIENCING MODERATE CLEAR ICING AT 10,000, REQUEST 7,000"
- ___ "REVISING ORLANDO ESTIMATE TO 26"
- ___ "BE ADVISED DME RECEIVER IS INOPERATIVE"
- ___ "BE ADVISED RATE OF CLIMB IN EXCESS OF 1,000 FPM"
- ___ "BE ADVISED RATE OF CLIMB IS 400 FPM"
- 211 What report, if any, is required for a holding pattern when in radar contact?
- 212 What is the maximum indicated airspeed allowed by a propeller-driven aircraft

holding at 14,000' MSL?

- 213 How is the recommended entry procedure to a holding pattern determined?
- 214 What are the types of holding pattern entries? Is it required by the FARs that one of those entries be used to enter a hold? Why or why not? Are there any guidelines?
- 215 How far in advance of the hold are you normally issued a hold clearance?
- 216 At what point should you normally begin timing the first outbound leg of a non-standard holding pattern?
- 217 On a flight from Atlanta to Dallas above 18,000' how often would you reset your altimeter?
- 218 What freedom does a clearance to descend at pilot's discretion give you? (when? where? rate? etc)
- 219 Where does the arrival route for a STAR procedure begin?
- 220 When does ATC issue a STAR?
- 221 In regard to operation within Class D airspace, does ATC have the authority to assign, request, or approve a higher speed than the speed prescribed by FAR Part 91?
- 222 What does MVA stand for? In what type of terrain is it most commonly found? How much clearance does it give you?
- 223 You are being radar vectored and the assigned heading will cause your flight to pass through the final approach course (for the runway/approach you intend to use), but you have not yet been cleared for the approach. What action, if any, should you take?
- 224 What type of airport/approach would have a timed approach from a holding fix?
- 225 When a holding pattern is specified in lieu of a Procedure Turn, what limitations are on the holding maneuver?
- 226 If you made a decision to execute the missed approach prior to the MAP and the procedure specifies a climbing right turn to 5,000', what procedure should you follow?
- 227 If on a visual or contact approach are you still required to fly the complete published instrument approach procedure?

- 228 Both pilot and controller have the authority to initiate a request for a contact approach. True or False?
- 229 Is it possible for a controller to issue, or a pilot to request, a visual approach when the airport is in sight but the traffic to be followed is not?
- 230 Is the MDA for a sidestep maneuver generally higher/lower/same as circling minimums?
- 231 If you are cleared to fly a published sidestep maneuver to a parallel runway, at what point does ATC expect you to start the maneuver?
- 232 Who is responsible for closing your IFR flight plan at an airport with an operating control tower? (trick question)
- 233 What visual illusion is associated with a long, narrow runway?
- 234 If you lose visual contact with the airport during a circling procedure and ATC radar service is not available, what action should you take?
- 235 What level of the atmosphere containing the vast majority of the earth's weather?
- 236 What is the major cause of weather?
- 237 What does the close spacing of isobars on a weather map indicate?
- 238 What is Coriolis Force?
- 239 Within 2,000' of the ground, surface friction causes the wind to flow at an angle to the isobars. True or False?
- 240 By what processes is moisture added to the atmosphere?
- 241 What happens to the total amount of moisture an airmass can hold as the temperature of that airmass increases? (can it hold more or less) Why?
- 242 What is probable when the temperature/dewpoint spread is small and decreasing? Why? What is dewpoint?
- 243 What is rain called that remains liquid even though its temperature is below freezing? How does that happen?
- 244 What is formed when the temperature of an object is below the ambient dewpoint

and the dewpoint is below freezing?

- 245 How is frost formed?
- 246 What is indicated about the air when there is a low ambient lapse rate? What is ambient lapse rate?
- 247 Where should you estimate the cloud bases as being if the surface temperature is 90°F and the dewpoint is 63°F (assuming a standard lapse rate)?
- 248 What is indicated if the air temperature increases as altitude increases?
- 249 Explain the different characteristics of stable vs. unstable air.
- 250 What is a cloud with extensive vertical development that forms in unstable air and contains a large amount of moisture, turbulence, icing, and lightning called?
- 251 What happens to the stability of an airmass when it is warmed from below?
- 252 When frontal passage is very rapid, is a narrow or wide frontal zone created? Why?
- 253 What is the most reliable indication that you are crossing a front?
- 254 In a cold front, what type (warm/cold) air is displacing what type (warm/cold) air at the surface?
- 255 Steady precipitation with little turbulence usually proceeds what type of front? Why?
- 256 What three conditions are necessary for thunderstorm formation?
- 257 Continuous updrafts occur in a thunderstorm during which stage?
- 258 When do thunderstorms reach their greatest intensity? Explain.
- 259 What is the term used to describe a narrow band of thunderstorms which normally contains the most severe types of weather-related hazards?
- 260 What hazard is always associated with a thunderstorm?
- 261 You may encounter hail in clear air several miles from a thunderstorm. True or False?
- 262 What cloud type is associated with the most severe thunderstorms?

- 263 What action should you take during an encounter with an unexpected thunderstorm?
- 264 During a stabilized landing approach, what happens to your pitch, IAS, and glide path if the wind unexpectedly shifts from a headwind to a tailwind? What action should you take?
- 265 When is wake turbulence the greatest? What causes it? How can you avoid it?
- 266 When trying to avoid wake turbulence and the other aircraft has just touched down, at what point should you plan your touchdown?
- 267 What is fog called that typically forms over fairly level land on clear, calm, humid nights?
- 268 With what relative humidity and what temperature spread is carburetor icing most likely?
- 269 What is indicated by encountering freezing rain in flight?
- 270 Airframe icing cannot occur when the outside air temperature is above 0°C (32°F). True or False?
- 271 Where should the freezing level be if the surface temperature is 53°F and all lapse rates are standard?
- 272 What should you do to avoid hydroplaning? When does it occur?

USE THE FOLLOWING INFORMATION FOR THE NEXT 9 QUESTIONS

METAR KLFT 031553Z 11040G63KT 1 1/4SM +RA BR FEW008 OVC014 24/24
A2907 RMK AO2 PK WND 11063/1545 SLP843 P0081 T02390239

- 273 What type of report is this? Where would you find it? Who would issue it?
- 274 What is the height of the lowest ceiling (if any) at KLFT?
- 275 What is the visibility? SM or NM?
- 276 Is KLFT VFR or IFR?
- 277 What is the altimeter setting _____ mb and _____ Hg.?
- 278 What are the winds and where are they from?
- 279 What is the temperature? Dewpoint? Spread? Is fog likely? Why/why not?
- 280 What does " PK WND 11063/1545" at the end of the report mean?
- 281 What does " T02390239" at the end of the report mean?

USE THE FOLLOWING INFORMATION FOR THE NEXT 3 QUESTIONS

UA/OV DEN 270050/TM 2300/FL 200/TP CE210/SK 080 BKN 120/150 OVC 170
/TB LGT/IC LGT RIME 080-130/RM IN CLR

282 What type of report is this? Translate this report to plain language.

283 Is icing reported? If so, where?

284 What is the thickness of the upper cloud layer? Is the pilot in the clouds?

USE THE FOLLOWING INFORMATION FOR THE NEXT 2 QUESTIONS

TAF KLFT 031130Z 031212 04025G30KT 5SM RA BKN010 TEMPO 1216
05040G50KT 1SM +SHRA BKN005
FM1600 33030G50KT 5SM -RA SCT007 OVC015 TEMPO 1618 1SM
+SHRA OVC007
FM0000 36020KT P6SM SCT020

285 What type of report is this? How often is it issued? How long is it valid?

286 Assume your ETA at KLFT is 1700Z. Based on the above information, is an alternate required? Are any of the other airports suitable alternates?

287 What does the term " TEMPO " indicate?

288 What should be used to determine the forecast weather between reporting points?

USE THE FOLLOWING INFORMATION FOR THE NEXT 3 QUESTIONS

DFWC FA 030945
SYNOPSIS AND VFR CLDS/WX
SYNOPSIS VALID UNTIL 040400
CLDS/WX VALID UNTIL 032200...OTLK VALID 032200-040400
OK TX AR TN LA MS AL AND CSTL WTRS

.
SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HGTS DENOTED BY AGL OR CIG.

.
SYNOPSIS...HRCN LILI MOVG ONSHORE OVR CNTRL LA CSTLN. SEE LTST
ADVSRY FROM NHC. QSTNRY FNTL SYS EXTDS FROM NRN OH AND CNTRL
IN
ACRS SRN IL..SWRN MO..SWRN OK INTO SERN CRNR OF NM. BY
04Z...CDFNT WILL EXTD FROM A LOW OVR SERN NEB ACRS CNTRL KS AND
WRN OK INTO BIG BEND AREA OF SW TX.

LA

NRN LA...AGL SCT-BKN030-050 BKN100. TOPS FL240. BKN CI. ISOL
-SHRA. BECMG 1622 CIGS BKN030-050. WDLY SCT TSRA/SHRA DVLPG.
CB TOPS FL400. OTLK...MVFR CIGS TSRA WIND.
SRN LA...CIGS OVC010-020. CLDS LYRD TO FL280. OVC CI. OCNL
RA/RA+...SCT TSRA+...POSS SEV. CB TOPS FL450. 14030G50KT
ERN SXNS...30025G40KT WRN SXNS. WND SPDS DMSHG TO 20G30KT
19Z-22Z. OTLK...MVFR CIGS SHRA WIND.

- 289 What type of report is this? Who issues it? How often is it issued? How long is it valid? Translate to plain language.
- 290 What kind of turbulence, if any, is forecast? Where? Why? How do you know?
- 291 What is the forecast over Southern Louisiana at 1700 Zulu?
- 292 Decode the following winds aloft forecast "751015"/
- 293 How would you write a winds aloft forecast signifying the wind is light and variable and the temperature is one degree above freezing? Explain.
- 294 What is a forecast of general thunderstorm activity for the next 24-hour period called?
- 295 What is the frequency for Flight Watch below 18,000' and what should you say to them on your initial call for enroute weather?
- 296 What is EFAS and when is it available and how?
- 297 Define each of the following **in full**:
AIRMET (WA)
SIGMET (WS)
Convective SIGMET (WST)
Center Weather Advisory (CWA)
Severe Weather Watch Bulletin (WW)
Severe Weather Forecast Alert (AWW)
- 298 When flying in an area in which HIWAS is available, you should be aware that Center, terminal ATC facilities, and FSSs discontinue their normal broadcast of in-flight weather advisories. True or False? Explain.

MATCH THE INFORMATION AT LEFT WITH THE CORRECT CHART(S)

- | | |
|--|----------------------|
| ___ Areas, levels, and intensity of turbulence | A. Surface Analysis |
| ___ Ceilings and visibilities | B. Weather Depiction |
| ___ Areas of severe weather | C. Radar Summary |
| ___ Freezing Levels | D. Constant Pressure |
| ___ Forecast movement: pressure systems/fronts | E. Freezing Level |

- ___ Observed temperature/dewpoint spread F. Low-Level Significant Wx Prog
___ Forecast of weather conditions G. Severe Weather Outlook

- 299 Is the jet stream stronger or weaker in the winter than the summer?
- 300 As the jet stream moves south, what happens to its average speed?
- 301 What is the boundary layer between the troposphere and the stratosphere?
- 302 What does a clear area within an area of cross-hatching on a tropopause wind prog chart indicate?
- 303 On the tropopause winds prog chart, what are streamlines used to show?
- 304 What is the frequency to use when declaring an emergency during an IFR flight in controlled airspace?
- 305 What is the international distress radio transmission term?
- 306 What is indicated by each of the following transponder codes?
7500?
7600?
7700?
- 307 What is the international urgent radio transmission term?
- 308 What is the difference between an urgent situation and an emergency situation?
- 309 What action should you take if you experience two-way radio communications failure while in VFR conditions on an IFR flight plan? VFR flight plan?
- 310 If you are operating IFR in controlled airspace, what navigation equipment loss, if any, must be immediately reported to ATC?
- 311 During a no-gyro approach, ATC expects all turns to be made at _____ rate.