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<b>TEMA:</b> 0296	FLT/DSP - (CHAP. 08) METEOROLOGY AND WEATHER SERVICES	
<b>COD_PREG:</b> P R E G U N T A:		<b>RPTA:</b>
9130	Fig. 8 - 21 What is the expected duration of an individual microburst?	C
<b>OPCION A:</b>	Five minutes with maximum winds lasting approximately 2 to 4 minutes.	
<b>OPCION B:</b>	One microburst may continue for as long as an hour.	
<b>OPCION C:</b>	Seldom longer than 15 minutes from the time the burst strikes the ground until dissipation.	
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9133	Which INITIAL cockpit indications should a pilot be aware of when a headwind shears to a calm wind?	C
<b>OPCION A:</b>	Indicated airspeed decreases, aircraft pitches up, and altitude decreases.	
<b>OPCION B:</b>	Indicated airspeed increases, aircraft pitches down, and altitude increases.	
<b>OPCION C:</b>	Indicated airspeed decreases, aircraft pitches down, and altitude decreases.	
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9134	Which condition would INITIALLY cause the indicated airspeed and pitch to increase and the sink rate to decrease?	C
<b>OPCION A:</b>	Sudden decrease in a headwind component.	
<b>OPCION B:</b>	Tailwind which suddenly increases in velocity.	
<b>OPCION C:</b>	Sudden increase in a headwind component.	
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9137	Which wind-shear condition results in a loss of airspeed?	B
<b>OPCION A:</b>	Decreasing headwind or tailwind.	
<b>OPCION B:</b>	Decreasing headwind and increasing tailwind.	
<b>OPCION C:</b>	Increasing headwind and decreasing tailwind.	
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9138	Which wind-shear condition results in an increase in airspeed?	C
<b>OPCION A:</b>	Increasing tailwind and decreasing headwind.	
<b>OPCION B:</b>	Increasing tailwind and headwind.	
<b>OPCION C:</b>	Decreasing tailwind and increasing headwind.	
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9139	Which is a definition of "severe wind shear"?	B
<b>OPCION A:</b>	Any rapid change of horizontal wind shear in excess of 25 knots; vertical shear excepted.	
<b>OPCION B:</b>	Any rapid change in wind direction or velocity which causes airspeed changes greater than 15 knots or vertical speed changes greater than 500 ft/min.	
<b>OPCION C:</b>	Any rapid change of airspeed greater than 20 knots which is sustained for more than 20 seconds or vertical speed changes in excess of 100 ft/min.	
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9151	What is a characteristic of the troposphere?	B
<b>OPCION A:</b>	It contains all the moisture of the atmosphere.	
<b>OPCION B:</b>	There is an overall decrease of temperature with an increase of altitude.	
<b>OPCION C:</b>	The average altitude of the top of the troposphere is about 6 miles.	
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9152	What is the primary cause of all changes in the Earth's weather?	A
<b>OPCION A:</b>	Variations of solar energy at the Earth's surface.	
<b>OPCION B:</b>	Changes in air pressure over the Earth's surface.	
<b>OPCION C:</b>	Movement of air masses from moist areas to dry areas.	
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9153	What characterizes a ground-based inversion?	C
<b>OPCION A:</b>	Convection currents at the surface.	
<b>OPCION B:</b>	Cold temperatures.	
<b>OPCION C:</b>	Poor visibility.	
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9154	What feature is associated with a temperature inversion?	A
<b>OPCION A:</b>	A stable layer of air.	
<b>OPCION B:</b>	An unstable layer of air.	
<b>OPCION C:</b>	Air mass thunderstorms.	

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9155 When does minimum temperature normally occur during a 24-hour period? A  
**OPCION A:** After sunrise.  
**OPCION B:** About 1 hour before sunrise.  
**OPCION C:** At midnight.

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9157 At lower levels of the atmosphere, friction causes the wind to flow across isobars into a low because the friction A  
**OPCION A:** decreases windspeed and Coriolis force.  
**OPCION B:** decreases pressure gradient force.  
**OPCION C:** creates air turbulence and raises atmospheric pressure.

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9158 Which type wind flows downslope becoming warmer and dryer? C  
**OPCION A:** Land breeze.  
**OPCION B:** Valley wind.  
**OPCION C:** Katabatic wind.

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9159 What is a feature of air movement in a high pressure area? B  
**OPCION A:** Ascending from the surface high to lower pressure at higher altitudes.  
**OPCION B:** Descending to the surface and then outward.  
**OPCION C:** Moving outward from the high at high altitudes and into the high at the surface.

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9160 Where is the usual location of a thermal low? C  
**OPCION A:** Over the arctic region.  
**OPCION B:** Over the eye of a hurricane.  
**OPCION C:** Over the surface of a dry, sunny region.

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9165 What term describes an elongated area of low pressure? A  
**OPCION A:** Trough.  
**OPCION B:** Ridge.  
**OPCION C:** Hurricane or typhon.

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9168 Where is a common location for an inversion? B  
**OPCION A:** At the tropopause.  
**OPCION B:** In the stratosphere.  
**OPCION C:** At the base of cumulus clouds.

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9169 What condition produces the most frequent type of ground- or surface-based temperature inversion? C  
**OPCION A:** The movement of colder air under warm air or the movement of warm air over cold air.  
**OPCION B:** Widespread sinking of air within a thick layer aloft resulting in heating by compression.  
**OPCION C:** Terrestrial radiation on a clear, relatively calm night.

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9170 Which term applies when the temperature of the air changes by compression or expansion with no heat added C  
or removed?  
**OPCION A:** Katabatic.  
**OPCION B:** Advection.  
**OPCION C:** Adiabatic.

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9171 What is the approximate rate unsaturated air will cool flowing upslope? A  
**OPCION A:** 3° per 1,000 feet.  
**OPCION B:** 2° per 1,000 feet.  
**OPCION C:** 4° per 1,000 feet.

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9176 At which location does Coriolis force have the least effect on wind direction? C  
**OPCION A:** At the poles.  
**OPCION B:** Middle latitudes (30° to 60°).  
**OPCION C:** At the Equator.

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9177 How does Coriolis force affect wind direction in the Southern Hemisphere? A  
**OPCION A:** Causes clockwise rotation around a low.  
**OPCION B:** Causes wind to flow out of a low toward a high.  
**OPCION C:** Has exactly the same effect as in the Northern Hemisphere.

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9178	Which weather condition is defined as an anticyclone?	B
<b>OPCION A:</b>	Calm.	
<b>OPCION B:</b>	High pressure area.	
<b>OPCION C:</b>	COL.	

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9182	What is the result when water vapor changes to the liquid state while being lifted in a thunderstorm?	A
<b>OPCION A:</b>	Latent heat is released to the atmosphere.	
<b>OPCION B:</b>	Latent heat is transformed into pure energy.	
<b>OPCION C:</b>	Latent heat is absorbed from the surrounding air by the water droplet.	

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9184	What is indicated about an air mass if the temperature remains unchanged or decreases slightly as altitude is increased?	C
<b>OPCION A:</b>	The air is unstable.	
<b>OPCION B:</b>	A temperature inversion exists.	
<b>OPCION C:</b>	The air is stable.	

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9185	What weather condition occurs at the altitude where the dewpoint lapse rate and the dry adiabatic lapse rate converge?	A
<b>OPCION A:</b>	Cloud bases form.	
<b>OPCION B:</b>	Precipitation starts.	
<b>OPCION C:</b>	Stable air changes to unstable air.	

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9186	Which process causes adiabatic cooling?	A
<b>OPCION A:</b>	Expansion of air as it raises.	
<b>OPCION B:</b>	Movement of air over a colder surface.	
<b>OPCION C:</b>	Release of latent heat during the vaporization process.	

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9187	When saturated air moves downhill, its temperature increases	B
<b>OPCION A:</b>	at a faster than dry air because of the release of latent heat.	
<b>OPCION B:</b>	at a slower rate than dry air because vaporization uses heat.	
<b>OPCION C:</b>	at a slower rate than dry air because condensation releases heat.	

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9188	Which condition is present when a local parcel of air is stable?	A
<b>OPCION A:</b>	The parcel of air resists convection.	
<b>OPCION B:</b>	The parcel of air cannot be forced uphill.	
<b>OPCION C:</b>	As the parcel of air moves upward, its temperature becomes warmer than the surrounding air.	

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9189	Convective clouds which penetrate a stratus layer can produce which threat to instrument flight?	C
<b>OPCION A:</b>	Freezing rain.	
<b>OPCION B:</b>	Clear air turbulence.	
<b>OPCION C:</b>	Embedded thunderstorms.	

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9190	Which type clouds are indicative of very strong turbulence?	B
<b>OPCION A:</b>	Nimbostratus.	
<b>OPCION B:</b>	Standing lenticular.	
<b>OPCION C:</b>	Cirrocumulus.	

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9191	What is a feature of a stationary front?	C
<b>OPCION A:</b>	The warm front surface moves about half the speed of the cold front surface.	
<b>OPCION B:</b>	Weather conditions are a combination of strong cold front and strong warm front weather.	
<b>OPCION C:</b>	Surface winds tend to flow parallel to the frontal zone.	

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9192	Which event usually occurs after an aircraft passes through a front into the colder air?	C
<b>OPCION A:</b>	Temperature/dewpoint spread decreases.	
<b>OPCION B:</b>	Wind direction shifts to the left.	
<b>OPCION C:</b>	Atmospheric pressure increases.	

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9193 What minimum thickness of cloud layer is indicated if precipitation is reported as light or greater intensity? A  
**OPCION A:** 4,000 feet thick.  
**OPCION B:** 2,000 feet thick.  
**OPCION C:** A thickness which allows the cloud tops to be higher than the freezing level.

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9194 Which condition produces weather on the lee side of a large lake? A  
**OPCION A:** Warm air flowing over a colder lake may produce fog.  
**OPCION B:** Cold air flowing over a warmer lake may produce advection fog.  
**OPCION C:** Warm air flowing over a cool lake may produce rain showers.

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9195 How can the stability of the atmosphere be determined? A  
**OPCION A:** Ambient temperature lapse rate.  
**OPCION B:** Atmospheric pressure at various levels.  
**OPCION C:** Surface temperature/dewpoint spread.

---

9196 Which weather phenomenon signals the beginning of the mature stage of a thunderstorm? B  
**OPCION A:** The appearance of an anvil top.  
**OPCION B:** The start of rain at the surface.  
**OPCION C:** Growth rate of the cloud is at its maximum.

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9197 During the life cycle of a thunderstorm, which stage is characterized predominately by downdrafts? B  
**OPCION A:** Cumulus.  
**OPCION B:** Dissipating.  
**OPCION C:** Mature.

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9198 What feature is normally associated with the cumulus stage of a thunderstorm? C  
**OPCION A:** Beginning of rain at the surface.  
**OPCION B:** Frequent lightning.  
**OPCION C:** Continuous updraft.

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9199 What is indicated by the term "embedded thunderstorms"? C  
**OPCION A:** Severe thunderstorms are embedded in a squall line.  
**OPCION B:** Thunderstorms are predicted to develop in a stable air mass.  
**OPCION C:** Thunderstorms are obscured by other types of clouds.

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9200 Where do squall lines most often develop? B  
**OPCION A:** In an occluded front.  
**OPCION B:** Ahead of a cold front.  
**OPCION C:** Behind a stationary front.

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9202 Atmospheric pressure changes due to a thunderstorm will be at the lowest value B  
**OPCION A:** during the downdraft and heavy rain showers.  
**OPCION B:** when the thunderstorm is approaching.  
**OPCION C:** immediately after the rain showers have stopped.

---

9203 Why are downdrafts in a mature thunderstorm hazardous? A  
**OPCION A:** Downdrafts are kept cool by cold rain which tends to accelerate the downward velocity.  
**OPCION B:** Downdrafts converge toward a central location under the storm after striking the surface.  
**OPCION C:** Downdrafts become warmer than the surrounding air and reverse into an updraft before reaching the surface.

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9204 What is a difference between an air mass thunderstorm and a steady-state thunderstorm? B  
**OPCION A:** Air mass thunderstorms produce precipitation which falls outside of the updraft.  
**OPCION B:** Air mass thunderstorm downdrafts and precipitation retard and reverse the updrafts.  
**OPCION C:** Steady-state thunderstorms are associated with local surface heating.

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9205 Which type storms are most likely to produce funnel clouds or tornadoes? B  
**OPCION A:** Air mass thunderstorms.  
**OPCION B:** Cold front or squall line thunderstorms.  
**OPCION C:** Storms associated with icing and supercooled water.

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9206 When advection fog has developed, what may tend to dissipate or lift the fog into low stratus clouds? B  
**OPCION A:** Temperature inversion.  
**OPCION B:** Wind stronger than 15 knots.  
**OPCION C:** Surface radiation.

---

9207 Which conditions are necessary for the formation of upslope fog? A  
**OPCION A:** Moist, stable air behind moved over gradually rising ground by a wind.  
**OPCION B:** A clear sky, little or no wind, and 100 percent relative humidity.  
**OPCION C:** Rain falling through stratus clouds and a 10- to 25-knot wind moving the precipitation up the slope.

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9208 How are haze layers cleared or dispersed? B  
**OPCION A:** By convective mixing in cool night air.  
**OPCION B:** By wind or the movement of air.  
**OPCION C:** By evaporation similar to the clearing of fog.

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9209 Which feature is associated with the tropopause? C  
**OPCION A:** Absence of wind and turbulence.  
**OPCION B:** Absolute upper limit of cloud formation.  
**OPCION C:** Abrupt change of temperature lapse rate.

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9210 Which type cloud is associated with violent turbulence and a tendency toward the production of funnel clouds? A  
**OPCION A:** Cumulonimbus mamma.  
**OPCION B:** Standing lenticular.  
**OPCION C:** Stratocumulus.

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9211 A clear area in a line of thunderstorm echoes on a radar scope indicates C  
**OPCION A:** the absence of clouds in the area.  
**OPCION B:** an area of no convective turbulence.  
**OPCION C:** an area where precipitation drops are not detected.

---

9212 When flying over the top of a severe thunderstorm, the cloud should be overflown by at least A  
**OPCION A:** 1,000 feet for each 10 knots windspeed.  
**OPCION B:** 2,500 feet.  
**OPCION C:** 500 feet above any moderate to a severe turbulence layer.

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9213 What type weather change is to be expected in an area where frontolysis is reported? B  
**OPCION A:** The frontal weather is becoming stronger.  
**OPCION B:** The front is dissipating.  
**OPCION C:** The front is moving at a faster speed.

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9214 Which weather condition is an example of a nonfrontal instability band? A  
**OPCION A:** Squall line.  
**OPCION B:** Advection fog.  
**OPCION C:** Frontogenesis.

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9215 Which atmospheric factor cause rapid movement of surface fronts? A  
**OPCION A:** Upper winds blowing across the front.  
**OPCION B:** Upper low located directly over the surface low.  
**OPCION C:** The cold front overtaking and lifting the warm front.

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9216 In which meteorological conditions can frontal waves and low pressure areas form? B  
**OPCION A:** Warm fronts or occluded fronts.  
**OPCION B:** Slow-moving cold fronts or stationary fronts.  
**OPCION C:** Cold front occlusions.

---

9217 What weather difference is found on each side of a "dry line"? B  
**OPCION A:** Extreme temperature difference.  
**OPCION B:** Dewpoint difference.  
**OPCION C:** Stratus versus cumulus clouds.

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9219 What action is recommended when encountering turbulence due to a wind shift associated with a sharp pressure trough? A

**OPCION A:** Establish a course across the trough.

**OPCION B:** Climb or descend to a smoother level.

**OPCION C:** Increase speed to get out of the trough as soon as possible.

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9220 In comparison to an approach in a moderate headwind, which is an indication of a possible wind shear due to a decreasing headwind when descending on the glide slope? B

**OPCION A:** Less power is required.

**OPCION B:** Higher pitch attitude is required.

**OPCION C:** Lower descent rate is required.

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9226 What is the lowest cloud in the stationary group associated with a mountain wave? A

**OPCION A:** Rotor cloud.

**OPCION B:** Standing lenticular.

**OPCION C:** Low stratus.

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9227 Where is the normal location of the jetstream relative to surface lows and fronts? A

**OPCION A:** The jetstream is located north of the surface systems.

**OPCION B:** The jetstream is located south of the low and warm front.

**OPCION C:** The jetstream is located over the low and crosses both the warm front and the cold front.

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9228 Which type frontal system is normally crossed by the jetstream? C

**OPCION A:** Cold front and warm front.

**OPCION B:** Warm front.

**OPCION C:** Occluded front.

---

9229 Which type clouds may be associated with the jetstream? B

**OPCION A:** Cumulonimbus cloud line where the jetstream crosses the cold front.

**OPCION B:** Cirrus clouds on the equatorial side of the jetstream.

**OPCION C:** Cirrostratus cloud band on the polar side and under the jetstream.

---

9230 Which action is recommended if jetstream turbulence is encountered with a direct headwind or tailwind? C

**OPCION A:** Increase airspeed to get out of the area quickly.

**OPCION B:** Change occurs to fly on the polar side of the jetstream.

**OPCION C:** Change altitude or course to avoid a possible elongated area.

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9231 Which action is recommended regarding an altitude change to get out of jetstream turbulence? A

**OPCION A:** Descend if ambient temperature is falling.

**OPCION B:** Descend if ambient temperature is rising.

**OPCION C:** Maintain altitude if ambient temperature is not changing.

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9232 Clear air turbulence (CAT) associated with a mountain wave may extend as far as B

**OPCION A:** 1,000 miles or more downstream of the mountain.

**OPCION B:** 5,000 feet above the tropopause.

**OPCION C:** 100 miles or more upwind of the mountain.

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9235 Turbulence encountered above 15,000 feet AGL, not associated with cloud formations, should be reported as C

**OPCION A:** convective turbulence.

**OPCION B:** high altitude turbulence.

**OPCION C:** clear air turbulence.

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9237 What is likely location of clear air turbulence? A

**OPCION A:** In an upper trough on the polar side of a jetstream.

**OPCION B:** Near a ridge aloft on the equatorial side of a high pressure flow.

**OPCION C:** Downstream of the equatorial side of a jetstream.

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9238 Where do the maximum winds associated with the jetstream usually occur? A  
**OPCION A:** In the vicinity of breaks in the tropopause on the polar side of the jet core.  
**OPCION B:** Below the jet core where a long straight stretch of the jetstream is located.  
**OPCION C:** On the equatorial side of the jetstream where moisture has formed cirriform clouds.

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9239 Which type jetstream can be expected to cause the greater turbulence? C  
**OPCION A:** A straight jetstream associated with a high pressure ridge.  
**OPCION B:** A jetstream associated with a wide isotherm spacing.  
**OPCION C:** A curving jetstream associated with a deep low pressure trough.

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9240 What weather feature occurs at altitude levels near the tropopause? A  
**OPCION A:** Maximum winds and narrow wind shear zones.  
**OPCION B:** Abrupt temperature increase above the tropopause.  
**OPCION C:** Thin layers of cirrus (ice crystal) clouds at the tropopause level.

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9241 Where are jetstreams normally located? B  
**OPCION A:** In areas of strong low pressure systems in the stratosphere.  
**OPCION B:** At the tropopause where intensified temperature gradients are located.  
**OPCION C:** In a single continuous band, encircling the Earth, where there is a break

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9242 Which measurement is reported as runway visibility? C  
**OPCION A:** Visibility reported by a ground observer from the airport control tower.  
**OPCION B:** Slant range visibility in the landing area of the active runway.  
**OPCION C:** Distance down the runway a pilot can see unlighted objects.

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9263 What type turbulence should be reported when it causes in altitude and/or attitude more than two-thirds of the time, with the aircraft remaining in positive control at all times? B  
**OPCION A:** Continuous severe chop.  
**OPCION B:** Continuous moderate turbulence.  
**OPCION C:** Intermittent moderate turbulence.

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9264 What type turbulence should be reported when it momentarily causes slight, erratic changes in altitude and/or attitude, one-third to two-thirds of the time? C  
**OPCION A:** Occasional light chop.  
**OPCION B:** Moderate chop.  
**OPCION C:** Intermittent light turbulence.

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9269 Figure 145 A  
What condition is reported at Childress (KCDS)?  
**OPCION A:** Light rain showers.  
**OPCION B:** Heavy rain showers began 42 minutes after the hour.  
**OPCION C:** The ceiling is solid overcast at an estimated 1,800 feet above sea level.

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9270 Figure 145 C  
What condition is reported at Dallas (KDAL)?  
**OPCION A:** The tops of the overcast is 10,000 feet.  
**OPCION B:** Temperature/dewpoint spread is 8°F.  
**OPCION C:** Altimeter setting is 30.07.

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9272 SPECI KGLS 131802Z 10012G21KT 060V140 B  
2SM+SHRA SCT005BKN035 OVC050CB24/23 A2980  
RMK RAB57 WS TKO RW09L WSHFT 58 FROPA.  
This SPECI report at Galveston (KGLS) indicates which condition?  
**OPCION A:** Wind steady at 100° magnetic at 12 knots, gusts to 21.  
**OPCION B:** Precipitation started at 57 after the hour.  
**OPCION C:** 5,000 feet overcast with towering cumulus.

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9701 The horizontal wind shear, critical for turbulence (moderate or greater) per 150 miles is B  
**OPCION A:** 18 knots or less.  
**OPCION B:** greater than 18 knots.  
**OPCION C:** not a factor, only vertical shear is a factor.

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9706 A severe thunderstorm is one in which the surface wind is A  
**OPCION A:** 50 knots greater and/or surface hail is 3/4 inch or more in diameter.  
**OPCION B:** 55 knots or greater and/or surface hail is 1/2 inch or more in diameter.  
**OPCION C:** 45 knots or greater and/or surface hail is 1 inch or more in diameter.

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9708 A squall line is a sudden increase of at least 15 knots in average wind speed to a sustained speed of C  
**OPCION A:** 25 knots or more for at least 1 minute.  
**OPCION B:** 20 knots or more for at least 2 minutes.  
**OPCION C:** 20 knots or more for at least 1 minute.

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9712 Clouds or obscuring phenomena aloft, through which blue sky or higher sky cover is visible, is known as a C  
**OPCION A:** thin overcast.  
**OPCION B:** partial obscuration.  
**OPCION C:** "transparent" sky cover.

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