TEMA: 0159 COMMERCIAL PILOT - (CH. 6) WEATHER

COD_PREG: **PREGUNTA:** **RPTA:**

5301 Every physical process of weather is accompanied by or is the result of — A

OPCION A: a heat exchange.
OPCION B: the movement of air.
OPCION C: a pressure differential.

5304 Which conditions are favorable for the formation of a surface based temperature inversion? — A

OPCION A: Clear, cool nights with calm or light wind.
OPCION B: Area of unstable air rapidly transferring heat from the surface.
OPCION C: Broad areas of cumulus clouds with smooth, level bases at the same altitude.

5310 What causes wind? — C

OPCION A: The Earth's rotation.
OPCION B: Air mass modification.
OPCION C: Pressure differences.

5312 Why does the wind have a tendency to flow parallel to the isobars above the friction level? — A

OPCION A: Coriolis force tends to counterbalance the horizontal pressure gradient.
OPCION B: Coriolis force acts perpendicular to a line connecting the highs and lows.
OPCION C: Friction of the air with the Earth deflects the air perpendicular to the pressure gradient.

5314 With regard to windflow patterns shown on surface analysis charts; when the isobars are — C

OPCION A: close together, the pressure gradient force is slight and wind velocities are weaker.
OPCION B: not close together, the pressure gradient force is greater and wind velocities are stronger.
OPCION C: close together, the pressure gradient force is greater and wind velocities are stronger.

5315 What prevents air from flowing directly from high-pressure areas to low-pressure areas? — A

OPCION A: Coriolis force.
OPCION B: Surface friction.
OPCION C: Pressure gradient force.

5317 Which is true with respect to a high- or low-pressure system? — C

OPCION A: A high-pressure area or ridge is an area of rising air.
OPCION B: A low-pressure area or trough is an area of descending air.
OPCION C: A high-pressure area or ridge is an area of descending air.

5318 Which is true regarding high- or low-pressure systems? — B

OPCION A: A high-pressure area or ridge is an area of rising air.
OPCION B: A low-pressure area or trough is an area of rising air.
OPCION C: Both high- and low-pressure areas are characterized by descending air.

5320 Which is true regarding actual air temperature and dewpoint temperature spread? The temperature spread — B

OPCION A: decreases as the relative humidity decreases.
OPCION B: decreases as the relative humidity increases.
OPCION C: increases as the relative humidity increases.

5322 Virga is best described as — A

OPCION A: streamers of precipitation trailing beneath clouds which evaporates before reaching the ground.
OPCION B: wall cloud torrents trailing beneath cumulonimbus clouds which dissipate before reaching the ground.
OPCION C: turbulent areas beneath cumulonimbus clouds.

5323 Moisture is added to a parcel of air by — C

OPCION A: sublimation and condensation.
OPCION B: evaporation and condensation.
OPCION C: evaporation and sublimation.

5324 Ice pellets encountered during flight normally are evidence that — B

OPCION A: a warm front has passed.

OPCION B: a warm front is about to pass.
OPCION C: there are thunderstorms in the area.

5325 What is indicated if ice pellets are encountered at 8,000 feet? A

OPCION A: Freezing rain at higher altitude.
OPCION B: You are approachig an area of thunderstorms.
OPCION C: You will encounter hail if you continue your flight.

5326 Ice pellets encountered during flight are normally evidence that C

OPCION A: a cold front has passed.
OPCION B: there are thunderstorms in the area.
OPCION C: freezing rain exists at hiher altitudes.

5327 When conditionally unstable air with high-moisture content and very warm surface temperature is forecast, one can expect what type of weather? C

OPCION A: Strong updrafts and stratonimbus clouds.
OPCION B: Restricted visibility near the surface over a large area.
OPCION C: Strong updrafts and cumulonimbus clouds.

5328 What is the approximate base of the cumulus clouds if the temperature at 2,000 feet MSL is 10°C and the dewpoint is 1°C? C

OPCION A: 3,000 feet MSL.
OPCION B: 4,000 feet MSL.
OPCION C: 6,000 feet MSL.

5329 If clouds form as a result of very stable, moist air being forced to ascend a mountain slope, the clouds will be C

OPCION A: cirrus type with no vertical development or turbulence.
OPCION B: cumulus type with considerable vertical development and turbulence.
OPCION C: stratus type with little vertical development and little or no turbulence.

5330 What determines the structure or type of clouds which will form as a result of air being forced to ascend? B

OPCION A: The method by which the air is lifted.
OPCION B: The stability of the air before lifting occurs.
OPCION C: The relative humidity of the air after lifting occurs.

5331 Refer to the excerpt from the following METAR report: B

KTUS.....08004KT 4SM HZ.....26/04 A2995 RMK RAE36

At approximately what altitude AGL should bases of convective-type cumuliform clouds be expected?

OPCION A: 4,400 feet.
OPCION B: 8,800 feet.
OPCION C: 17,600 feet.

5332 What are the characteristics of stable air? B

OPCION A: Good visibility; steady precipitation; stratus clouds.
OPCION B: Poor visibility; steady precipitation; stratus clouds.
OPCION C: Poor visibility; intermittent precipitation; cumulus clouds.

5333 Which would decrease the stability of an air mass? A

OPCION A: Warming from below.
OPCION B: Cooling from below.
OPCION C: Decrease in water vapor.

5334 From which measurement of the atmosphere can stability be determined? B

OPCION A: Atmospheric pressure.
OPCION B: The ambient lapse rate.
OPCION C: The dry adiabatic lapse rate.

5335 What type weather can one expect from moist, unstable air, and very warm surface temperatures? C

OPCION A: Fog and low stratus clouds.
OPCION B: Continuous heavy precipitation.
OPCION C: Strong updrafts and cumulonimbus clouds.

5336 Which would increase the stability of an air mass? B

OPCION A: Warming from below.
OPCION B: Cooling from below.
OPCION C: Decrease in water vapor.

5337 The conditions necessary for the formation of stratiform clouds are a lifting action and B

OPCION A: unstable, dry air.
OPCION B: stable, moist air.
OPCION C: unstable, moist air.

5338 Which cloud types would indicate convective turbulence? C

OPCION A: Cirrus clouds.
OPCION B: Nimbostratus clouds.
OPCION C: Towering cumulus clouds.

5339 The presence of standing lenticular altocumulus clouds is a good indication of B

OPCION A: lenticular ice formation in calm air.
OPCION B: very strong turbulence.
OPCION C: heavy icing conditions.

5340 The formation of either predominantly stratiform or predominantly cumuliform clouds is dependent upon the B

OPCION A: source of lift.
OPCION B: stability of the air being lifted.
OPCION C: temperature of the air being lifted.

5341 Which combination of weather-producing variables would likely result in cumuliform-type clouds, good visibility, and showery rain? B

OPCION A: Stable, moist air and orographic lifting.
OPCION B: Unstable, moist air and orographic lifting.
OPCION C: Unstable, moist air and no lifting mechanism.

5342 What is a characteristic of stable air? A

OPCION A: Stratiform clouds.
OPCION B: Fair weather cumulus clouds.
OPCION C: Temperature decreases rapidly with altitude.

5343 A moist, unstable air mass is characterized by B

OPCION A: poor visibility and smooth air.
OPCION B: cumuliform clouds and showery precipitation.
OPCION C: stratiform clouds and continuous precipitation.

5344 When an air mass is stable, which of these conditions are most likely to exist? C

OPCION A: Numerous towering cumulus and cumulonimbus clouds.
OPCION B: Moderate to severe turbulence at the lower levels.
OPCION C: Smoke, dust, haze, etc., concentrated at the lower levels with resulting poor visibility.

5345 Which is a characteristic of stable air? C

OPCION A: Cumuliform clouds.
OPCION B: Excellent visibility.
OPCION C: Restricted visibility.

5346 Which is a characteristic typical of a stable air mass? C

OPCION A: Cumuliform clouds.
OPCION B: Showery precipitation.
OPCION C: Continuous precipitation.

5347 Which is true regarding a cold front occlusion? The air ahead of the warm front — B

OPCION A: is colder than the air behind the overtaking cold front.
OPCION B: is warmer than the air behind the overtaking cold front.
OPCION C: has the same temperature as the air behind the overtaking cold front.

5348 Which are characteristics of a cold air mass moving over a warm surface? — B

OPCION A: Cumuliform clouds, turbulence, and poor visibility.
OPCION B: Cumuliform clouds, turbulence, and good visibility.
OPCION C: Stratiform clouds, smooth air, and poor visibility.

5349 The conditions necessary for the formation of cumulonimbus clouds are a lifting action and — C

OPCION A: unstable, dry air.
OPCION B: stable, moist air.
OPCION C: unstable, moist air.

5350 Fog produced by frontal activity is a result of saturation due to — C

OPCION A: nocturnal cooling.
OPCION B: adiabatic cooling.
OPCION C: evaporation of precipitation.

5351 What is an important characteristic of wind shear? — C

OPCION A: It is present at only lower levels and exists in a horizontal direction.
OPCION B: It is present at any level and exists in only a vertical direction.
OPCION C: It can be present at any level and can exist in both a horizontal and vertical direction.

5352 Hazardous wind shear is commonly encountered — C

OPCION A: near warm or stationary frontal activity.
OPCION B: when the wind velocity is stronger than 35 knots.
OPCION C: in areas of temperature inversion and near thunderstorms.

5353 Low-level wind shear may occur when — B

OPCION A: surface winds are light and variable.
OPCION B: there is a low-level temperature inversion with strong winds above the inversion.
OPCION C: surface winds are above 15 knots and there is no change in wind direction and windspeed with height.

5354 If a temperature inversion is encountered immediately after takeoff or during an approach to a landing, a potential hazard exists due to — A

OPCION A: wind shear.
OPCION B: strong surface winds.
OPCION C: strong convective currents.

5355 GIVEN: — A

Winds at 3,000 feet AGL ..... 30 kts
Surface winds ..... Calm

While on approach for landing under clear skies with convective turbulence a few hours after sunrise, one should
OPCION A: increase approach airspeed slightly above normal to avoid stalling.
OPCION B: keep the approach airspeed at or slightly below normal to compensate for floating.
OPCION C: not alter the approach airspeed, these conditions are nearly ideal.

5356 Convective currents are most active on warm summer afternoons when winds are — A

OPCION A: light.
OPCION B: moderate.
OPCION C: strong.

5357 When flying low over hilly terrain, ridges, or mountain ranges, the greatest potential danger from turbulent air currents will usually be encountered on the — B

OPCION A: leeward side when flying with a tailwind.

OPCION B: leeward side when flying into the wind.
OPCION C: windward side when flying into the wind.

5358 During an approach, the most important and most easily recognized means of being alerted to possible wind shear is monitoring the — C

OPCION A: amount of trim required to relieve control pressures.
OPCION B: heading changes necessary to remain on the runway centerline.
OPCION C: power and vertical velocity required to remain on the proper glidepath.

5359 During departure, under conditions of suspected low-level wind shear, a sudden decrease in headwind will cause — A

OPCION A: a loss in airspeed equal to the decrease in wind velocity.
OPCION B: a gain in airspeed equal to the decrease in wind velocity.
OPCION C: no change in airspeed, but groundspeed will decrease.

5360 Which situation would most likely result in freezing precipitation? Rain falling from air which has a temperature of — C

OPCION A: 32°F or less into air having a temperature of more than 32°F.
OPCION B: 0°C or less into air having a temperature of 0°C or more.
OPCION C: more than 32°F into air having temperature of 32°F or less.

5361 Which statement is true concerning the hazards of hail? — C

OPCION A: Hail damage in horizontal flight is minimal due to the vertical movement of hail in the clouds.
OPCION B: Rain at the surface is a reliable indication of no hail aloft.
OPCION C: Hailstones may be encountered in clear air several miles from a thunderstorm.

5362 Hail is most likely to be associated with — B

OPCION A: cumulus clouds.
OPCION B: cumulonimbus clouds.
OPCION C: stratocumulus clouds.

5363 The most severe weather conditions, such as destructive winds, heavy hail, and tornadoes, are generally associated with — B

OPCION A: slow-moving warm fronts which slope above the tropopause.
OPCION B: squall lines.
OPCION C: fast-moving occluded fronts.

5365 If airborne radar is indicating an extremely intense thunderstorm echo, this thunderstorm should be avoided by a distance of at least — A

OPCION A: 20 miles.
OPCION B: 10 miles.
OPCION C: 5 miles.

5366 Which statement is true regarding squall lines? — C

OPCION A: They are always associated with cold fronts.
OPCION B: They are slow in forming, but rapid in movement.
OPCION C: They are nonfrontal and often contain severe, steady-state thunderstorms.

5367 Which statement is true concerning squall lines? — C

OPCION A: They form slowly, but move rapidly.
OPCION B: They are associated with frontal systems only.
OPCION C: They offer the most intense weather hazards to aircraft.

5368 Select the true statement pertaining to the life cycle of a thunderstorm. — B

OPCION A: Updrafts continue to develop throughout the dissipating stage of a thunderstorm.
OPCION B: The beginning of rain at the Earth's surface indicates the mature stage of the thunderstorm.
OPCION C: The beginning of rain at the Earth's surface indicates the dissipating stage of the thunderstorm.

5369 What visible signs indicate extreme turbulence in the thunderstorms? — C

OPCION A: Base of the clouds near the surface, heavy rain, and hail.
OPCION B: Low ceiling and visibility, hail, and precipitation static.
OPCION C: Cumulonimbus clouds, very frequent lightning, and roll clouds.

5370 Which weather phenomenon signals the beginning of the mature stage of a thunderstorm? A

OPCION A: The start of rain.
OPCION B: The appearance of an anvil top.
OPCION C: Growth rate of clouds is maximum.

5371 What feature is normally associated with the cumulus stage of a thunderstorm? B

OPCION A: Roll cloud.
OPCION B: Continuous updraft.
OPCION C: Beginning of rain at the surface.

5372 During the life cycle of a thunderstorm, which stage is characterized predominately by downdrafts? C

OPCION A: Mature.
OPCION B: Developing.
OPCION C: Dissipating.

5373 What minimum distance should exist between intense radar echoes before any attempt is made to fly between these thunderstorms? C

OPCION A: 20 miles.
OPCION B: 30 miles.
OPCION C: 40 miles.

5374 Which in-flight hazard is most commonly associated with warm fronts? C

OPCION A: Advection fog.
OPCION B: Radiation fog.
OPCION C: Precipitation-induced fog.

5375 Which is true regarding the use of airborne weather-avoidance radar for the recognition of certain weather conditions? A

OPCION A: The radarscope provides no assurance of avoiding instrument weather conditions.
OPCION B: The avoidance of hail is assured when flying between and just clear of the most intense echoes.
OPCION C: The clear area between intense echoes indicates that visual sighting of storms can be maintained when flying between the echoes.

5376 A situation most conducive to the formation of advection fog is B

OPCION A: a light breeze moving colder air over a water surface.
OPCION B: an air mass moving inland from the coastline during the winter.
OPCION C: a warm, moist air mass settling over a cool surface under no-wind conditions.

5377 Advection fog has drifted over a coastal airport during the day. What may tend to dissipate or lift this fog into low stratus clouds? C

OPCION A: Nighttime cooling.
OPCION B: Surface radiation.
OPCION C: Wind 15 knots or stronger.

5378 What lifts advection fog into low stratus clouds? C

OPCION A: Nighttime cooling.
OPCION B: Dryness of the underlying land mass.
OPCION C: Surface winds of approximately 15 knots or stronger.

5379 In what ways do advectin fog, radiation fog, and steam for differ in their formation or location? A

OPCION A: Radiation fog is restricted to land areas; advection fog is most common along coastal areas; steam fog forms over a water surface.
OPCION B: Advection fog deepens as windspeed increases up to 20 knots; steam fog requires calm or very light wind; radiation fog forms when the ground or water cools the air by radiation.
OPCION C: Steam fog forms from moist air moving over a colder surface; advection fog requires cold air over a warmer surface; radiation fog is produced by radiational cooling of the ground.

5380 With respect to advection fog, which statement is true? C

OPCION A: It is slow to develop, and dissipates quite rapidly.

OPCION B: It forms almost exclusively at night or near daybreak.
OPCION C: It can appear suddenly during day or night, and it is more persistent than radiation fog.

5381 Which feature is associated with the tropopause? B

OPCION A: Constant height above the Earth.
OPCION B: Abrupt change in temperature lapse rate.
OPCION C: Absolute upper limit of cloud formation.

5382 A common location of clear air turbulence is A

OPCION A: in an upper trough on the polar side of a jet stream.
OPCION B: near a ridge aloft on the equatorial side of a high-pressure flow.
OPCION C: south of an east/west oriented high-pressure ridge in its dissipating stage.

5383 The jet stream and associated clear and air turbulence can sometimes be visually identified in flight by B

OPCION A: dust or haze at flight level.
OPCION B: long streaks or cirrus clouds.
OPCION C: a constant outside air temperature.

5384 During the winter months in the middle latitudes, the jet stream shifts toward the B

OPCION A: north and speed decreases.
OPCION B: south and speed increases.
OPCION C: north and speed increases.

5385 The strength and location of the jet stream is normally A

OPCION A: weaker and farther north in the summer.
OPCION B: stronger and farther north in the winter.
OPCION C: stronger and farther north in the summer.

5393 The conditions most favorable to wave formation over mountainous areas are a layer of A

OPCION A: stable air at mountaintop altitude and a wind of at least 20 knots blowing across the ridge.
OPCION B: unstable air at mountaintop altitude and a wind of at least 20 knots blowing across the ridge.
OPCION C: moist, unstable air at mountaintop altitude and a wind of less than 5 knots blowing across the ridge.

5447 Which type of jetstream can be expected to cause the greater turbulence? B

OPCION A: A straight jetstream associated with a low-pressure trough.
OPCION B: A curving associated with a deep low-pressure trough.
OPCION C: A jetstream occurring during the summer at the lower latitudes.

5448 A strong wind shear can be expected C

OPCION A: in the jetstream front above a core having a speed of 60 to 90 knots.
OPCION B: if the 5°C isotherms are spaced between 7° to 10° of latitude.
OPCION C: on the low-pressure side of a jetstream core where the speed at the core is stronger than 110 knots.

5450 One of the most dangerous features of mountain waves is the turbulent areas in and A

OPCION A: below rotor clouds.
OPCION B: above rotor clouds.
OPCION C: below lenticular clouds.

5739 Frost covering the upper surface of an airplane wing usually will cause B

OPCION A: the airplane to stall at an angle of attack that is higher than normal.
OPCION B: the airplane to stall at an angle of attack that is lower than normal.
OPCION C: drag factors so large that sufficient speed cannot be obtained for takeoff.