

## Unit 6 – Atmosphere & Weather Twitter Review Questions

U6-1: A high pressure center represents a(n) \_\_\_\_\_ (cyclonic/anticyclonic) system.

- Answer: Anticyclonic

U6-2: On average, what total percentage of solar energy is absorbed (directly & indirectly) by Earth's surface?

- Answer: 50%

U6-3: Explain why more solar radiation reaches the equatorial regions as compared to the polar regions.

- Answer: Receives sunrays more directly due to Earth's 23.5-degree tilt

U6-4: What feature in the stratosphere helps in the absorption of the Sun's UV rays?

- Answer: Ozone layer

U6-5: Describe a cumulus cloud.

- Answer: "Pile" / Rising domes or towers / small or large / precipitation & storm clouds

U6-6: NEED TO KNOW: Be able to label the correct seasons in relation to its position to the Sun.

- Answer: Summer → Fall → Winter → Spring

U6-7: On a weather map, where would you expect to find the fastest/highest wind speeds?

- Answer: Where the isobars are closest together

U6-8: Explain how you determine the direction that a weather front is moving on a weather map.

- Answer: The side of the weather front line (red or blue) that the front symbol (semi-circle or triangle) lies on determines direction of front movement; NOT just direction that the line itself curves toward

U6-9: NEED TO KNOW: Be able to label and identify all weather fronts and weather conditions that come with each.

- Answer: Warm, Cold, Stationary, Occluded

U6-10: Describe a cold front.

- Answer: Cold air replaces warm air, forcing warm air up. Winds, showers, T-storms over a short period. Warmer temps ahead of front and cooler temps behind front. Blue line with blue triangles.

U6-11: Describe an occluded front.

- Answer: Cold front overtakes warm front, wedging warm air upward. Precipitation of both sides of front. Purple line with alternating purple semi-circles and triangles on same side of line.

U6-12: NEED TO KNOW: Be able to identify and describe all types of air masses.

- Answer: cP (continental polar; dry & cold) / cT (continental tropical ; dry & warm) / mP (maritime polar ; wet & cold) / mT (maritime tropical ; wet & warm)

U6-13: An air mass formed over land near the equator would develop \_\_\_\_ (dry/wet) and \_\_\_\_ (warm/cold) conditions.

- Answer: Dry & Warm/Hot

U6-14: The origin in which an air mass first develops is referred to as its \_\_\_\_.

- Answer: Source Region

U6-15: When air/wind comes in contact with a mountain, it produces a windward side and leeward side. Describe the difference.

- Answer: Windward – Side of mountain where wind is coming from / Leeward – Opposite side of mountain from which wind came from

U6-16: Lower altitude/elevation is expected to experience \_\_\_\_ (warmer/colder) temperatures.

- Answer: Warmer

U6-17: A prevailing wind system is moving towards a mountain. Which area of the mountain will receive the greatest amount of precipitation?

- Answer: Windward side of mountain near the top of mountain as the air is forced up the side of the mountain (orographic lifting)

U6-18: Order the layers of the atmosphere from lowest to highest.

- Answer: Troposphere → Stratosphere → Mesosphere → Thermosphere → Exosphere

U6-19: Explain why higher altitudes have lower air pressure.

- Answer: The air in higher altitudes is much thinner due to a lower quantity of air particles present that can cause collisions. This relatively low collision occurrences produce lower air pressure.

U6-20: Most weather phenomena occur in which layer of the atmosphere?

- Answer: Troposphere

U6-21: Fair weather can usually be expected with the approach of a \_\_\_\_\_ (high/low) pressure system.

- Answer: High pressure (Anticyclonic flow)

U6-22: Describe the difference between a cyclone versus an anti-cyclone.

- Answer: Cyclone – Low pressure center that rotates counter-clockwise and rising air at its center. Brings precipitation/showers/T-storms

Anticyclone – Exact opposite of a cyclone

U6-23: Describe the entire process of evaporation, condensation, and precipitation.

- Answer: Warm air rises to higher altitudes (evaporation:  $l \rightarrow g$ ) where it is cooled and condensed into water vapor (condensation:  $g \rightarrow l$ ). Precipitation occurs once saturation is reached and returns to surface as rain

U6-24: NEED TO KNOW: Interpret & use relative humidity chart to determine dry bulb temp, wet bulb temp, and relative humidity percentage.

- Answer: [Dry bulb temp – Wet bulb temp = Difference of temp] ; Use the difference of temp value to compare with dry bulb temp to determine relative humidity percentage from chart

U6-25: Describe the density of warm air versus cold air.

- Answer: Warm air = less dense ; Cold air = more dense

U6-26: Describe the water vapor capacity of warm air versus cold air.

- Answer: Warm air = Holds more water vapor ; Cold air = Holds less water vapor

U6-27: Which types of clouds are most likely to bring light to moderate precipitation?

- Answer: Stratus clouds ; sheets/layers of low clouds covering much of the sky

U6-28: Describe the shape of cirrus clouds.

- Answer: High, thin and wispy (feathery)

U6-29: What phase change will occur when the air temperature drops below the dew point?

- Answer: Condensation

U6-30: Heat is able to travel through mediums like water and magma through a process called \_\_\_\_\_.

- Answer: Convection

U6-31: Due to the Coriolis Effect, winds rotate \_\_\_\_\_ in the Northern Hemisphere and \_\_\_\_\_ in the Southern Hemisphere.

- Answer: Clockwise/right ; Counter-Clockwise/left

U6-32: Earth receives energy from the Sun in the form of \_\_\_\_\_.

- Answer: Radiation

U6-33: Using relative humidity chart, determine relative humidity if dry bulb temperature is 12C and wet bulb temperature is 8C.

- Answer: 57%

U6-34: On average, what percentage of Sun's energy is absorbed by Earth's atmosphere and clouds, never reaching Earth's surface?

- Answer: 20%

U6-35: Identify the two most abundant gases in Earth's atmosphere and its percentages.

- Answer: Nitrogen (78%) & Oxygen (20%)

U6-36: A high pressure system flows in a(n) \_\_\_\_\_ direction.

- Answer: Anticyclonic/Clockwise

U6-37: Which process of air/heat movement is associated with WEAK energy rays traveling in DIFFERENT directions?

- Answer: Scattering

U6-38: What is responsible for the Earth's seasons?

- Answer: Tilt of Earth on its 23.5-degree axis; NOT its physical distance from the Sun