

Chapter 7 Review Questions

MULTIPLE CHOICE: Choose the one alternative that best completes the statement or answers the question.

- Concerning rainfall patterns, areas of persistent high pressure tend to cause:
 - desert regions.
 - pronounced wet and dry seasons.
 - severe flooding.
 - moderate rainfall.
- Why do westerly winds prevail at upper altitudes?
 - rotation of the Earth
 - lower air density
 - absence of friction
 - rotation of the Earth and equator to pole temperature contrast
 - equator to pole temperature contrast
- The *doldrums* are associated with what latitude(s)?
 - the Tropic of Cancer
 - the equator
 - the mid-latitudes
 - the poles
- The prevailing winds that blow from the horse latitudes toward the doldrums are called:
 - subtropical northerlies.
 - westerlies.
 - trade winds.
 - polar easterlies.
 - southerlies.
- When are upper air winds fastest?
 - anytime surface temperature gradients are weak
 - in summer
 - in winter
 - These winds maintain about the same speed throughout the year.
- The dishpan experiments:
 - revealed nothing useful.
 - revealed a wavy circulation pattern when the pan was rotated.
 - were largely unsuccessful.
 - showed a simple convection cell pattern when the pan was rotated.
- Winds are usually named for:

- A) the direction or place to which they are heading.
 - B) the direction or place from which they are blowing.
 - C) the approximate latitude of their origin.
 - D) the altitude where they are strongest.
8. The Native American term *chinook* means:
- A) mountain wind.
 - B) big storm.
 - C) cold sun.
 - D) snow eater.
9. The region where the northeast trades meet the southeast trades is known as the:
- A) ITCZ.
 - B) hot zone.
 - C) high latitudes.
 - D) subtropics.
 - E) rain forest.
10. During the summer season, the subtropical high found in the North Atlantic is also called the:
- A) Azores high.
 - B) Atlantic high.
 - C) Bermuda high.
 - D) Carolina high.
11. The definition of the word “monsoon” means:
- A) rainy season.
 - B) torrential rainfall.
 - C) seasonal wind shift.
 - D) moisture-laden air.
12. The large rainfall totals associated with the Indian monsoon occur when:
- A) the winds shift to the north, blowing off of the Eurasian subcontinent.
 - B) the ITCZ shifts to the north, near the Himalaya Mountains.
 - C) high pressure develops over the Indian subcontinent.
 - D) the ITCZ shifts south towards the Tropic of Capricorn.
13. According to Hadley, the most important factor causing circulation patterns in the atmosphere was:
- A) high-low pressure distribution.
 - B) subsidence.
 - C) convection.
 - D) equator-pole temperature contrast.
14. The C in ITCZ stands for convergence. What does the convergence refer to?
- A) surface winds along the equator

- B) winds aloft near the poles
 - C) surface winds in the mid latitudes
 - D) surface winds in a monsoon
15. The wave-like or meandering pattern of the upper level winds in middle latitudes is of major importance for:
- A) reducing wind speeds in the tropics.
 - B) transporting heat between the equator and poles.
 - C) reducing the Coriolis effect.
 - D) causing westerly winds.
 - E) causing jet streams.
16. Which of these winds is not influenced very much by the Coriolis effect?
- A) Northeast trades
 - B) mid latitude westerlies
 - C) sea breeze
 - D) jet stream
17. Large scale wind circulation systems that reverse with the seasons are called:
- A) meridional cells.
 - B) typhoons.
 - C) tropical cyclones.
 - D) monsoons.
 - E) tropical anticyclones.
18. The Sahara and Australian deserts (among others) are associated with which pressure belt?
- A) subtropical high
 - B) subpolar low
 - C) equatorial low
 - D) polar high
19. All of the following can result from a strong El Niño event EXCEPT:
- A) the suppression of the Southern Oscillation.
 - B) depletion of fish populations as upwelling is suppressed along the western coast of South America.
 - C) weakening or reversing of the Pacific trade winds.
 - D) abnormally high air pressure over Indonesia.
20. The *Southern Oscillation*:
- A) is a cycle of strengthening and reversing trade winds in the equatorial Pacific.
 - B) is another name for a La Niña event.
 - C) does not have the ability to drastically alter climate, and is of little concern.
 - D) is more important to weather in the United States than anywhere else in the world.

21. The process that brings cold, nutrient-rich water to the surface along the coasts of Peru and Ecuador is called:

- A) thermocline suppression.
- B) El Niño.
- C) upwelling.
- D) the Southern Oscillation.