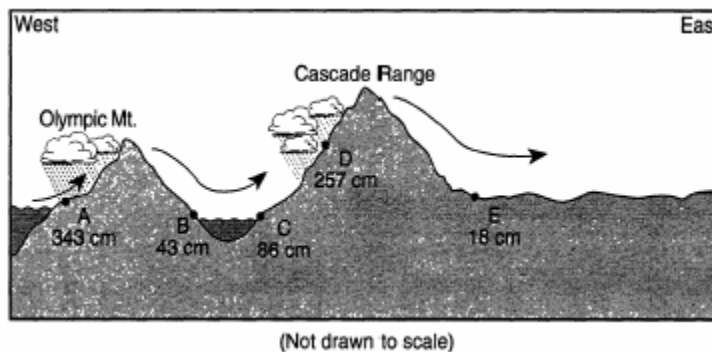


Climate Factors Review

1. What is the chief cause of the surface currents of the ocean?
 - 1 tides
 - 2 the Moon
 - 3 prevailing winds
 - 4 rivers

The diagram below shows the average yearly precipitation, in centimeters, at locations A through E across the state of Washington. Arrows indicate the direction of prevailing winds.



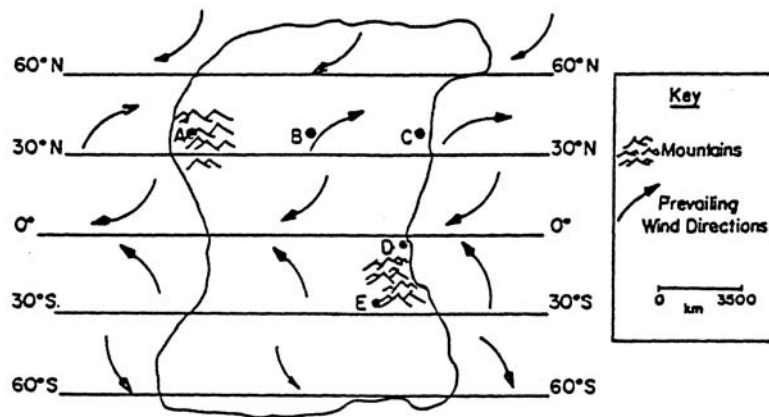
2. Which statement best explains why location B and location E receive relatively low average yearly precipitation?
 - 1 These locations are on the leeward side of mountain ranges.
 - 2 These locations are on the windward side of mountain ranges.
 - 3 These locations receive more insolation than the other locations.
 - 4 These locations receive less insolation than the other locations.

3. Which ocean current cools the climate of some locations along the western coastline of North America?
 - 1 Florida Current
 - 2 California Current
 - 3 Canaries Current
 - 4 Alaska Current

4. Which area of New York State would probably have the least annual temperature range?
 - 1 Long Island
 - 2 the Catskills
 - 3 the Adirondack peaks
 - 4 the Mohawk Valley

5. Compared to a coastal location of the same elevation and latitude, an inland location is likely to have
 - 1 warmer summers and cooler winters
 - 2 cooler summers and warmer winters
 - 3 warmer summers and warmer winters
 - 4 cooler summers and cooler winters

Base your answers to **questions 10-14** on the diagram below which represents an imaginary continent on the Earth with surface locations A through E. An ocean surrounds the continent and two mountain ranges are located as shown.



10. At which location would the total yearly potential evapotranspiration be the greatest?

- | | |
|-----|-----|
| 1 A | 3 C |
| 2 B | 4 D |

11. What type of climate would most likely be found at location E?

- | | |
|------------|------------------------|
| 1 arid | 3 humid |
| 2 subhumid | 4 tropical rain forest |

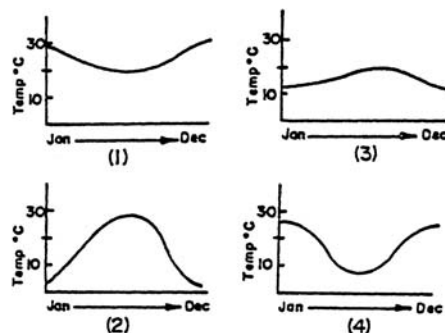
12. Location A would probably have a greater

- 1 range in yearly temperatures than location B
- 2 total yearly rainfall than location B
- 3 altitude of the Sun in the summer than location B
- 4 variation in the length of daylight hours than location B

13. The maximum insolation will occur at location E during the month of

- | | |
|---------|-------------|
| 1 March | 3 September |
| 2 June | 4 December |

14. Which graph best represents the relationship between temperature and time of year for location B?



Base your answers to **questions 15-19** on the climate graphs below and your knowledge of Earth Science. Each climate graph shows the average monthly temperature and the average monthly precipitation for a particular location. Precipitation amounts are shown by the shaded bars and are read from the scale at the left of the graph. Temperatures are shown by the solid line and are read from the scale at the right of the graph.

15. Which location shows the greatest amount of change in average monthly precipitation

- 1 A
- 2 B
- 3 C
- 4 D

16. Which location would most likely have the highest average potential evapotranspiration (Ep) value for the month of July?

- 1 A
- 2 B
- 3 C
- 4 D

17. Which location is in the Southern Hemisphere?

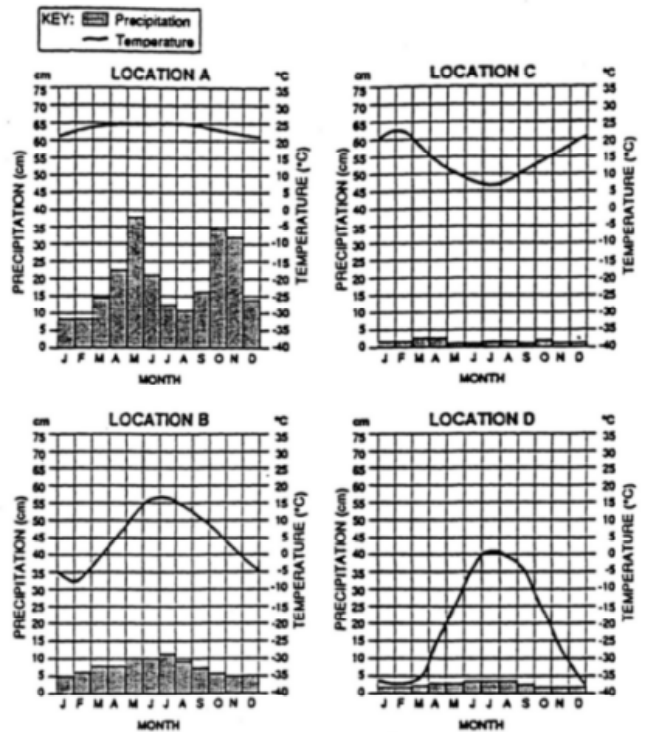
- 1 A
- 2 B
- 3 C
- 4 D

18. Which location has a climate typical of a region near the North Pole?

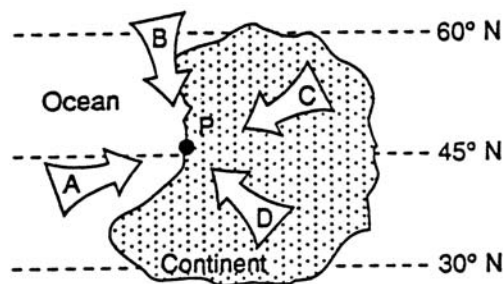
- 1 A
- 2 B
- 3 C
- 4 D

19. Which statement best explains the small temperature range at location A?

- 1 Location A is far from any large body of water.
- 2 Location A is close to the Equator.
- 3 Location A has a very high elevation.
- 4 Location A is located in a high-pressure wind belt.



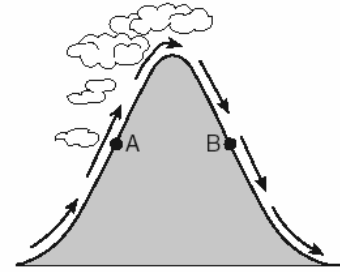
The map below shows an imaginary continent in the Earth's planetary wind belt between 30° and 60° North latitude. Location P is on the western edge of the continent.



20. Location P has mild winters with much precipitation. Which arrow indicates the direction of the prevailing winds at this location?

- 1 A
- 2 B
- 3 C
- 4 D

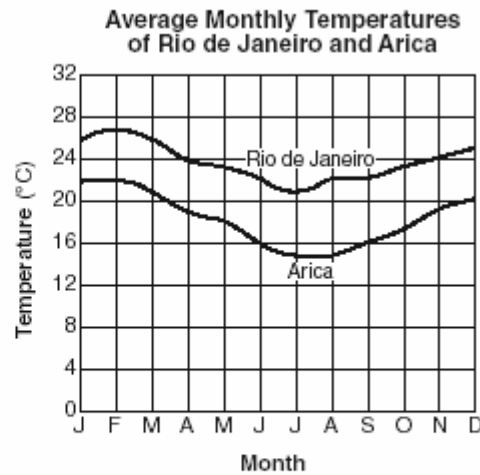
21 The cross section below shows the direction of air flowing over a mountain. Points A and B are at the same elevation on opposite sides of the mountain.



Compared to the air temperature and humidity at point A, the air temperature and humidity at point B are usually

- (1) cooler and drier
- (2) cooler and wetter
- (3) warmer and drier
- (4) warmer and wetter

Base your answers to questions 22 and 23 on the map and graph below. The map shows two cities, Arica and Rio de Janeiro, located on opposite coasts of South America. Both cities are near sea level. The graph shows the average monthly temperatures for the cities.



22 Why does Arica have cooler average monthly temperatures than Rio de Janeiro?

- (1) Rio de Janeiro receives insolation at a higher angle than Arica.
- (2) Rio de Janeiro is influenced by a warmer ocean current than Arica.
- (3) Arica is farther north than Rio de Janeiro.
- (4) Arica receives yearly insolation that is less intense than Rio de Janeiro.

23 The summer season at Arica and Rio de Janeiro occurs from approximately

- (1) March 21 through June 20
- (2) June 21 through September 22
- (3) September 23 through December 20
- (4) December 21 through March 20

24. Bodies of water have a moderating effect on climate primarily because

- 1 water gains heat more rapidly than land does
- 2 water surfaces are flatter than land surfaces
- 3 water temperatures are always lower than land temperatures
- 4 water temperatures change more slowly than land temperatures do