1. Base your answer to the following question on the diagram below, which represents the planetary wind and moisture belts in Earth’s Northern Hemisphere.

![Diagram of planetary wind and moisture belts](image)

The climate at 90° north latitude is dry because the air at that location is usually
(1) warm and rising  (2) warm and sinking  (3) cool and rising  (4) cool and sinking

2. The prevailing southwesterlies wind belt causes most low-pressure weather systems to travel across the United States from the
(1) southwest toward the northeast  (2) northwest toward the southeast  (3) northeast toward the southwest  (4) southeast toward the northwest

3. What is the general pattern of air movement on March 21 at Earth’s Equator (0°)?
(1) upward, due to low temperature and high pressure  
(2) upward, due to high temperature and low pressure  
(3) downward, due to low temperature and high pressure  
(4) downward, due to high temperature and low pressure

4. Snowfall is rare at the South Pole because the air over the South Pole is usually
(1) rising and moist  (2) rising and dry  (3) sinking and moist  (4) sinking and dry

5. According to the Earth Science Reference Tables, the prevailing winds at 45° S latitude are from the
(1) southwest  (2) northwest  (3) southeast  (4) northeast

6. Which planetary wind pattern is present in many areas of little rainfall?
(1) Winds converge and air sinks.  
(2) Winds converge and air rises.  
(3) Winds diverge and air sinks.  
(4) Winds diverge and air rises.

7. At which latitudes do currents of dry, sinking air cause the dry conditions of Earth’s major deserts?
(1) 0° and 30° N  (2) 60° N and 60° S  (3) 30° N and 30° S  (4) 60° S and 90° S

8. The planetary wind and moisture belts indicate that large amounts of rainfall occur at Earth’s Equator because air is
(1) converging and rising  
(2) converging and sinking  
(3) diverging and rising  
(4) diverging and sinking
9. Base your answer to the following question on the cross section below and on your knowledge of Earth science. The cross section shows the general movement of air within a portion of Earth’s atmosphere located between 30° N and 30° S latitude. Numbers 1 and 2 represent different locations in the atmosphere.

Which map best shows the surface movement of winds between 30° N and 30° S latitude?

(1)  

(2)  

(3)  

(4)  

10. A high air-pressure, dry-climate belt is located at which Earth latitude?

(1) 0°  
(2) 15° N  
(3) 30° N  
(4) 60° N
11. The planetary winds on Earth are indicated by the curving arrows in the diagram below. The curved paths of the planetary winds are a result of
(1) changes in humidity
(2) changes in temperature
(3) Earth’s rotation on its axis
(4) Earth’s gravitational force

12. Which map correctly shows the general pattern of flow of prevailing surface winds near the Equator on March 21?

(1) 5° N
0°
5° S

(2) 5° N
0°
5° S

(3) 5° N
0°
5° S

(4) 5° N
0°
5° S
13. Which graph best shows the average annual amounts of precipitation received at different latitudes on Earth?

(1) 

(2) 

(3) 

(4)
Base your answers to questions 14 through 18 on the diagram below, which represents a satellite image of Hurricane Gilbert in the Gulf of Mexico. Each X represents the position of the eye of the storm on the date indicated.

14. The general direction of Hurricane Gilbert's track from September 13 through September 18 was toward the
   (1) southwest   (3) northwest
   (2) southeast   (4) northeast

15. The surface wind pattern associated with Hurricane Gilbert was
   (1) counterclockwise and toward the center
   (2) counterclockwise and away from the center
   (3) clockwise and toward the center
   (4) clockwise and away from the center

16. What was the probable source of moisture for this hurricane?
   (1) carbon dioxide from the atmosphere
   (2) winds from the coastal deserts
   (3) transpiration from tropical jungles
   (4) evaporation from the ocean

17. On September 18, Hurricane Gilbert changed direction. Which statement provides the most probable reason for this change?
   (1) The airmass was cooled by the land surface.
   (2) The storm entered the prevailing westerlies wind belt.
   (3) The amount of precipitation released by the storm changed suddenly.
   (4) The amount of insolation received by the air mass decreased.

18. The air mass that gave rise to Hurricane Gilbert would be identified as
   (1) cP   (3) mT
   (2) cT   (4) mP

Nata/Lee
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