

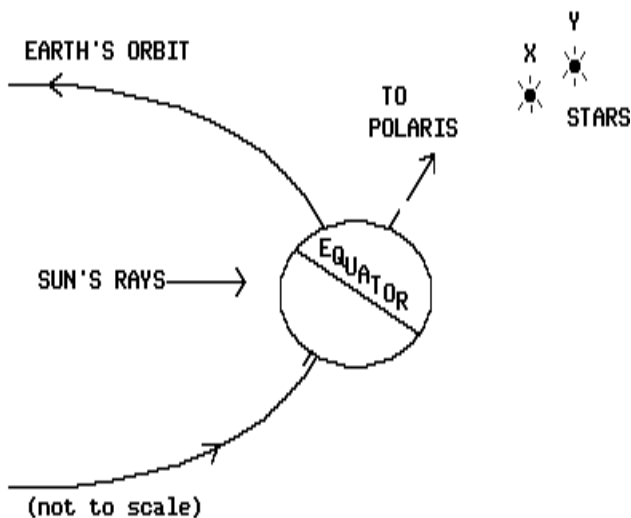
Name: \_\_\_\_\_

- 1) The length of time that daylight is received at a location during one day is called the location's
  - A) duration of insolation
  - B) eccentricity of insolation
  - C) intensity of insolation
  - D) angle of insolation
- 2) On the Earth, a freely swinging pendulum gradually shows a change in the direction of its swing. This change is evidence that the Earth
  - A) is an orbiting natural satellite
  - B) revolves around the Sun
  - C) rotates on its axis
  - D) has an elliptical orbit
- 3) Which planetary model allows a scientist to predict the exact positions of the planets in the night sky over many years?
  - A) The planets' orbits are circles in a heliocentric model.
  - B) The planets' orbits are ellipses in a geocentric model.
  - C) The planets' orbits are ellipses in a heliocentric model.
  - D) The planets' orbits are circles in a geocentric model.
- 4) The time required for one Earth rotation is about
 

A) one day	C) one year
B) one month	D) one hour

Questions 5 and 6 refer to the following:

The diagram below shows the Earth in its orbit. The vertical rays of the Sun are striking at  $23\frac{1}{2}^{\circ}$  South latitude. Stars *X* and *Y* are two of many which an observer would see in the nighttime sky.



- 5) Which statement best describes the apparent motion of stars *X* and *Y* as they are observed from a location in New York State for a period of 4 hours?
  - A) Star *X* appears to move away from star *Y*.
  - B) Star *X* and star *Y* show no apparent motion.
  - C) Star *X* and star *Y* appear to move away from Polaris.
  - D) Star *X* and star *Y* appear to move at a constant rate.

- 6) The orbiting motion of the Earth is best described as
 

A) inclination	C) rotation
B) revolution	D) declination
- 7) The day of the year, as units of time, are based upon motions of
 

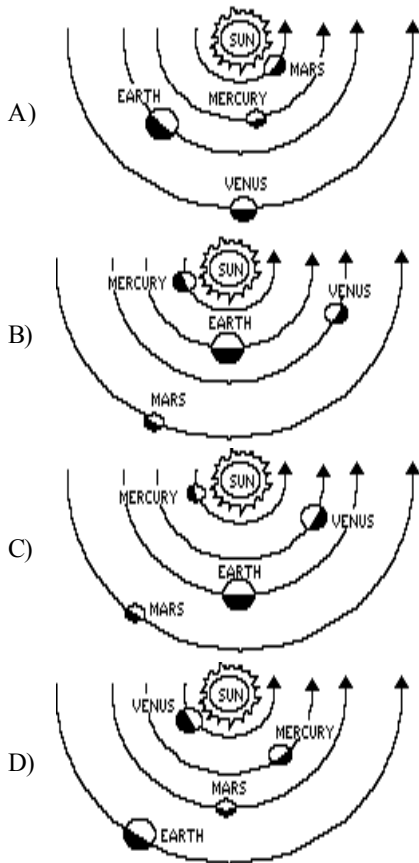
A) the Moon	C) the Sun
B) the Earth	D) the Stars
- 8) A sundial measures time based upon the position of the Sun in the sky. This time is called
 

A) mean time	C) apparent solar time
B) standard time	D) Greenwich time
- 9) Which is the best evidence for the Earth's rotation?
  - A) the rising of the Sun
  - B) the motion of a Foucault pendulum
  - C) the changing of the seasons
  - D) the phases of the Moon
- 10) Winds appear to curve toward the right in the Northern Hemisphere. This curving to the right is caused by the Earth's
 

A) rotation	C) shape
B) revolution	D) size
- 11) Cities located on the same meridian (longitude) must have the same
 

A) altitude	C) solar time
B) length of daylight	D) latitude
- 12) The geocentric model of the solar system does *not* explain
  - A) star trails
  - B) planetary motions
  - C) Foucault's pendulum
  - D) day and night
- 13) The Coriolis effect would be influenced most by a change in the Earth's
  - A) period of revolution
  - B) average surface temperature
  - C) rate of rotation
  - D) angle of tilt
- 14) The Coriolis effect provides evidence that the Earth
  - A) has an elliptical orbit
  - B) revolves around the Sun
  - C) rotates on its axis
  - D) has a magnetic field

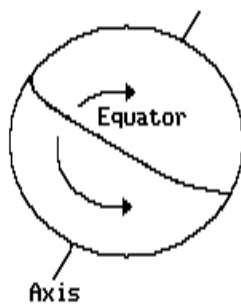
15) According to the *Earth Science Reference Tables*, which orbital path model correctly shows the relative positions of the Sun and its four nearest planets?



16) When does local solar noon always occur for an observer in New York State?

- A) when the Sun reaches its maximum altitude
- B) when the clock reads 12 noon
- C) when the Sun is directly overhead
- D) when the Sun is on the Prime Meridian

17) In the diagram, the arrows represent the paths of moving fluids on the surface of the Earth. Which statement best explains why the fluid is deflected?



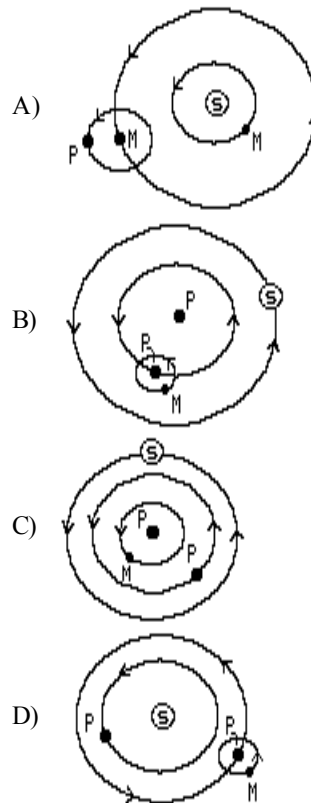
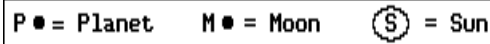
- A) The Earth is revolving around the Sun.
- B) The Earth is moving away from the Sun.
- C) The Earth is rotating on its axis.
- D) The axis of the Earth is tilted.

18) The predictable changes in the direction of swing of a Foucault pendulum would be influenced most by a change in the Earth's

- A) angle of tilt
- B) intensity of insolation
- C) rate of rotation
- D) period of revolution

19) Which diagram best represents the motions of celestial objects in a heliocentric model?

Key:

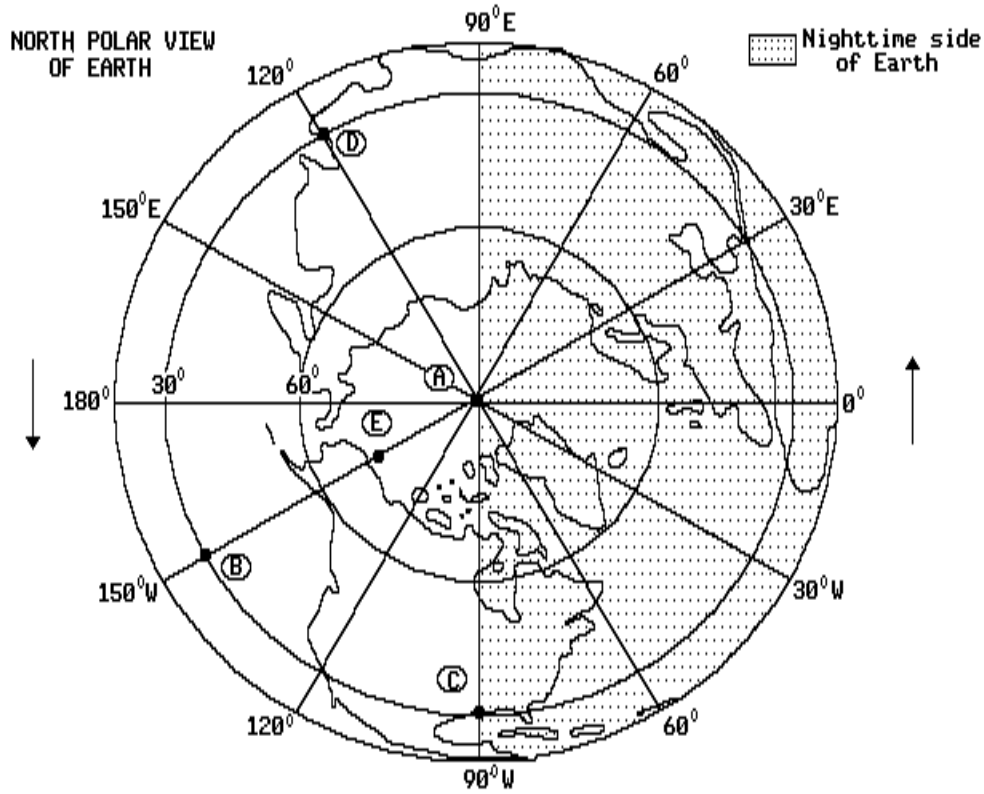


20) Which observation can *not* be explained by a geocentric model?

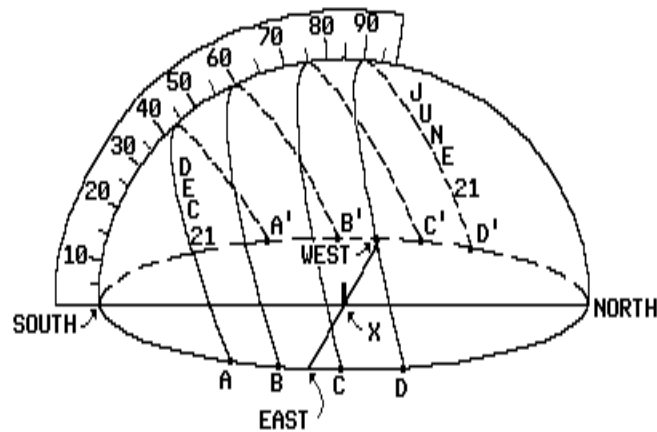
- A) A freely swinging pendulum appears to change direction.
- B) A planet's apparent diameter varies.
- C) The Sun's path through the sky is an arc.
- D) Stars follow circular paths around Polaris.

Questions 21 and 22 refer to the following:

On the map below, points *A* through *E* are points on the Earth's surface.



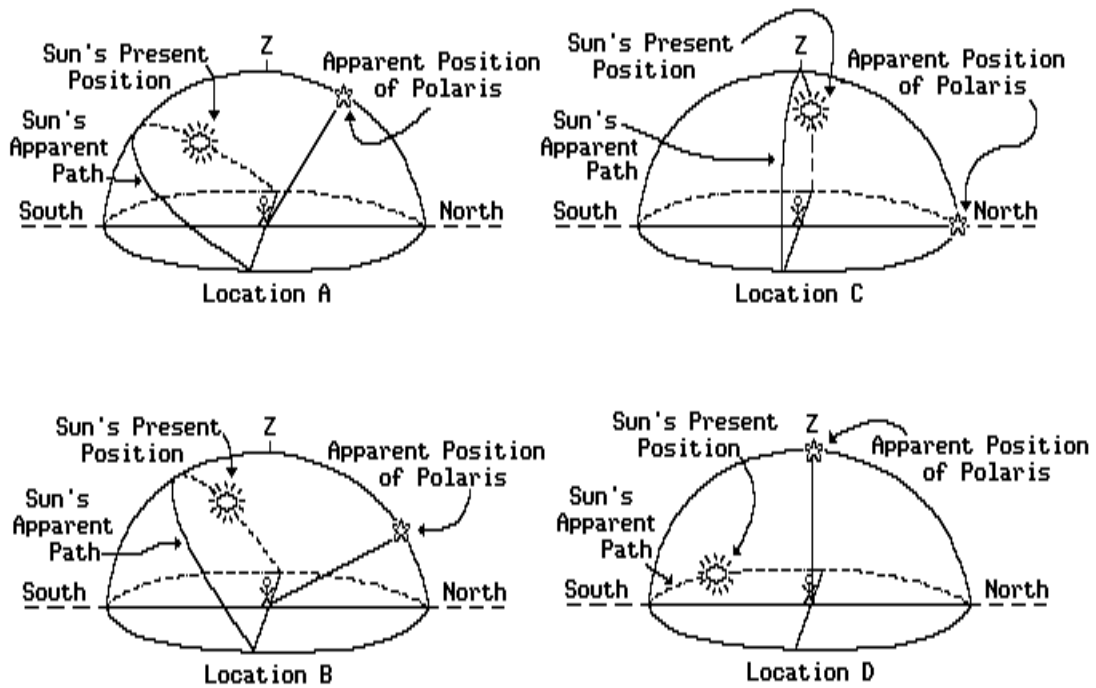
- 21) Which day of the year is represented by this diagram?  
 A) December 21                      C) March 21  
 B) June 21                              D) October 21
- 22) The time at point *C* is closest to  
 A) 6 a.m.                                      C) 12 midnight  
 B) 12 noon                                    D) 6 p.m.
- 23) The diagram below represents a plastic hemisphere upon which lines have been drawn to show the apparent paths of the Sun on four days at one location in the Northern Hemisphere. Two of the paths are dated. The protractor is placed over the north-south line. *X* represents the position of a vertical post.



Which path of the Sun would result in the longest shadow of the vertical post at solar noon?

- A) *A-A'*                                      B) *B-B'*                                      C) *C-C'*                                      D) *D-D'*

- 24) The diagrams below represent four locations on the Earth's surface at the same time on March 21. Lines have been drawn to represent the apparent path of the sun across the sky. The present position of the Sun, the position of Polaris, and the zenith (Z) are shown for an observer at each location.



What time of the day is shown by the Sun's present position at location A?

- A) midnight                      B) morning                      C) afternoon                      D) noon