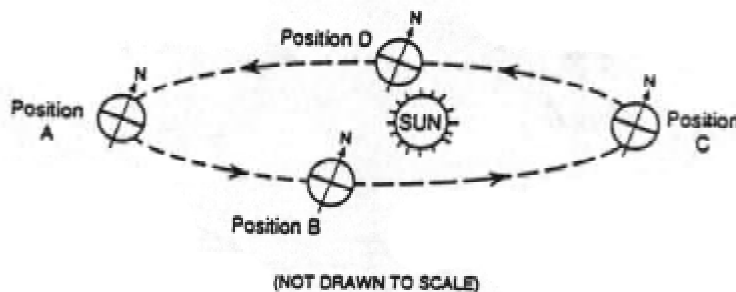


## ROMANO

### Earth Motions Practice #4 – ANSWERS AND EXPLANATIONS

- (4) the motion of a Foucault pendulum – The Foucault pendulum appeared to change in a predictable manor proving the Earth rotated.
- (4) the Earth's rotation – The rotating Earth causes the deflection (bending) of winds and ocean currents from their intended path
- (1) 1 degree – If the Earth has to travel  $360^\circ$  around the Sun in 365 days, it would move at about  $1^\circ$  / day.
- (1) 60 degrees – The Earth's rotation at a rate of  $15^\circ$  / hr causes the apparent motion of stars through the sky. Multiplying 4 hours by  $15^\circ$  / hr indicates  $60^\circ$  of apparent motion.
- (1) The stars appear to follow daily circular paths around Polaris. – Rotation of the Earth causes daily changes. The key word "daily" is in the question. This question is referring to the star trails that occur because the Earth rotates.
- (2) rotation of the Earth – The apparent rising and setting of the Sun occurs every day because the Earth rotates locations toward and away from the Sun.
- (4) The Sun would revolve around the Earth. – This is the definition of the geocentric model – the incorrect model of the Solar System that was later replaced by the heliocentric model.
- The Earth's rate of rotation is **15° per hour** ( $360^\circ / 24$  hours)
- How many hours of daylight does any location on the Earth experience on an equinox? **12 hours of daylight**
- Which model of the solar system placed the Sun at the center with planets revolving around it? **heliocentric model**
- What causes the different seasons experienced by locations on the Earth?  
**Earth's  $23\frac{1}{2}^\circ$  tilt, revolution and parallelism (North Pole always points toward one direction in space)**
- Define retrograde motion. According to the heliocentric model, is it a real or apparent motion?  
**Retrograde motion is the backwards motion of a planet.  
The heliocentric model explained it a an apparent motion.**
- Which position represents the first day of winter in the Northern Hemisphere?



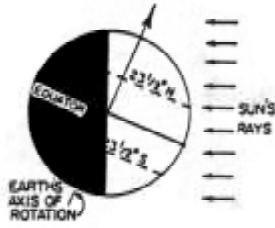
Answer:

**Position C**

## ROMANO

14. What is the date shown in the diagram below?

**June 21<sup>st</sup> (North Pole tilted toward the Sun)**



15. Give two facts concerning June 21.

**First day of summer in Northern hemisphere, longest daylight hours, Sun is highest at noon in NY**

16. What date represents the first day of Spring?

**March 21<sup>st</sup>**

17. What is the definition of rotation of a planet?

**spinning on its axis**

18. During which season is the Earth farthest from the Sun?

**when it is summer in the Northern Hemisphere**

19. On which date does the Northern Hemisphere have the least daylight hours?

**December 21<sup>st</sup>**

20. What does the term perihelion mean?

**Perihelion is when the Earth is closest to the Sun.**