SOL 4.8 EARTH, SUN, MOON

Key concepts include

a. the motions of Earth, the moon, and the sun;

b. the causes for Earth’s seasons;

c. the causes for the phases of the moon;

d. the relative size, position, age, and makeup of Earth, the moon, and the sun; and

e. historical contributions in understanding the Earth-moon-sun system.

MOTION - ROTATION, REVOLUTION, SEASONS

1. Which of these is the most responsible for the changes of the seasons on Earth?  
(2010 test – question 25)
   a. Position of the Moon  
   b. Tilt of Earth on its axis  
   c. Temperature of the Sun  
   d. Distance to Mars

2. Which of these takes about one year to complete?  
(2010 test – question 32)
   a. Earth to orbit the Sun  
   b. The Sun to orbit Earth  
   c. Earth to rotate on its axis  
   d. The Moon to orbit Earth

3. Earth makes a complete revolution around the Sun about once every —  
(2008 test – question 9)
   a. day  
   b. year  
   c. season  
   d. minute

4. Which of these describes rotation?  
(2009 test – question 22)
   a. Mercury goes around the Sun every 88 days.  
   b. The Moon goes around Earth every 28 days.  
   c. Earth orbits the Sun about every 365 days.  
   d. Earth makes one turn on its axis every 24 hours.

5. The motion of Earth around the Sun most affects the —  
(2007 test – question 14)
   a. timing of tides  
   b. length of a month  
   c. cycle of the seasons  
   d. phases of the Moon

6. The time between today’s sunrise and tomorrow’s sunrise would be about —  
(2003 test – question 4)
   a. 12 hours  
   b. 24 hours  
   c. 36 hours  
   d. 48 hours

7. Which of these best shows that the Earth revolves around the sun as the moon revolves around the Earth?  
(2004 test – question 30)

8. The rotation of the Earth on its axis causes —  
(2002 test – question 21)
   a. seasons  
   b. years  
   c. months  
   d. days

9. The moon revolves around —  
(2001 test – question 8)
   a. itself  
   b. the Earth  
   c. the sun  
   d. the solar system
10. The phases of the Moon occur in a certain order. Three phases are shown here. Which is the next phase in the sequence?
(2008 test – question 17)

11. Which of the following is the next phase of the moon?
(2004 test – question 26)

12. Which of these is the next phase of the moon?
(2002 test – question 14)

13. The surface of the Moon is made up of —
(2011 test – question 35)
   a. craters, highlands, and flat areas
   b. swirling gases
   c. large bodies of water
   d. a mixture of gases and water

14. Which of these best describes the Moon?
(2009 test – question 8)
   a. Older than Earth
   b. Smaller than Earth
   c. Having the same climate as Earth
   d. Having the same atmosphere as Earth

15. Sometimes you can see the moon during the daytime. The moon looks the same size as the sun, but the moon is 1/400 the size of the sun. Which of these best shows the size of the moon relative to the sun?
(2006 test – question 40)

16. If the Earth moved farther away from the sun, which of these would probably happen?
(2005 test – question 1)
   a. There would be no moon.
   b. There would be more solar eclipses.
   c. There would be colder weather.
   d. There would be more seasons.

17. How is the Earth different from all of the other planets?
(2005 test – question 15)
   a. It has a breathable atmosphere.
   b. It has a rocky surface.
   c. It is warmed by the sun.
   d. It rotates on its axis.
18. The Earth is very different from other planets in the solar system because it has the most —

(2003 test – question 39)

- solid rock
- volcanoes
- liquid water
- high winds

19. Which of these would fit best in area 3 of this Venn diagram?

(2007 test – question 32)

- Rocky surface
- Active volcanoes
- Liquid water present
- Oxygen in atmosphere

20. The distance between which of these is the shortest?

(2003 test – question 30)

- Earth and sun
- Moon and sun
- Earth and Mars
- Earth and moon

HISTORICAL CONTRIBUTIONS

21. About 400 years ago, Galileo became the first person to record what the moon looked like through a telescope. He was able to tell that the moon had —

(2006 test – question 35)

- many craters
- plants but no animals
- active volcanoes
- polar ice caps

22. The Apollo 11 mission was able to retrieve samples of the Moon’s surface because it was the first mission to have astronauts —

(2009 test – question 3)

- land on the Moon
- orbit a planet
- return to Earth
- walk in space

23. Which of these objects in the solar system has been visited by people from Earth?

(2010 test – question 10)

- Moon
- Sun
- Mars
- Asteroid