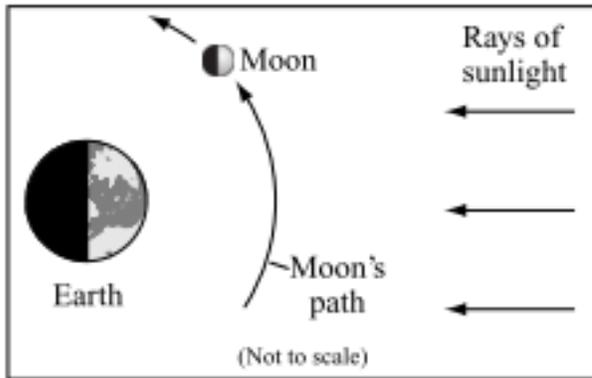


Unit 5 Test: Earth-Sun-Moon System

Multiple Choice: 30 questions at 2 points each (60 points)

1. The diagram below shows the relative positions of Earth and the Moon and rays of sunlight.



Based on the diagram, which of the following **best** represents how the Moon would appear as seen from Earth?

A.	
B.	
C.	
D.	

2. Miriam notices when she goes to the beach that sometimes the water rises as high as the pier. At other times of the day, the water barely covers the pillars under the pier. These differences in water level are **primarily** due to the gravitational influence of which of the following?

- a. The Sun
- b. The Moon
- c. Asteroids
- d. Comets

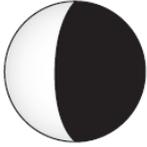
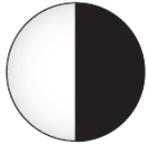
3. Which of the following statements **best** explains why it is warmer at the equator than at the North Pole?

- a. The equator has a larger area than the North Pole
- b. The equator is closer to the Sun than the North Pole.
- c. The equator receives more direct sunlight than the North Pole.
- d. The equator has more hours of daylight per year than the North Pole.

4. What are the large, flat dark areas on the moons surface called?

- a. rilles
- b. highlands
- c. maria
- d. craters

5. Which of the following pictures shows the appearance of the Moon when a solar eclipse occurs?

	A.	 <p>Waning Moon</p>
	B.	 <p>Quarter Moon</p>
	C.	 <p>Full Moon</p>
	D.	 <p>New Moon</p>

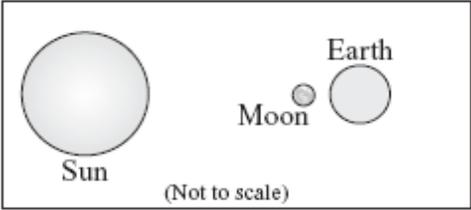
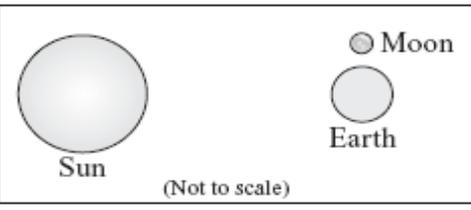
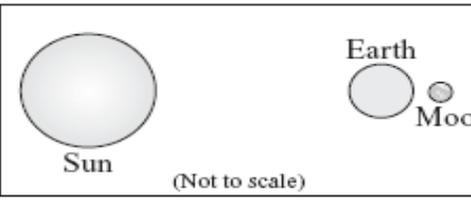
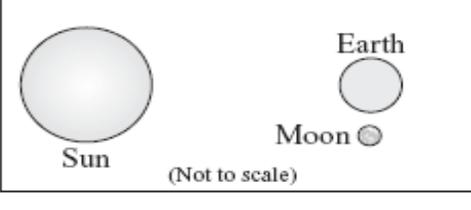
6. Which of the following statements **best** describes one way that the Moon is different from Earth?

- a. The Moon is not solid.
- b. The Moon has no gravity.
- c. The Moon has almost no atmosphere.
- d. The Moon receives almost no solar light.

7. The two types of energy the Earth gets from the Sun are:

- a. potential and kinetic
- b. sound and electrical
- c. thermal and light
- d. nuclear and gravitational

8. Which of the following diagrams **best** shows the relative positions of Earth, the Moon, and the Sun during a lunar eclipse?

<p>A.</p>	 <p>Diagram A shows the Sun on the left, the Moon in the middle, and the Earth on the right, all in a straight line. The Sun is the largest circle, Earth is a medium circle, and the Moon is the smallest circle. The text "(Not to scale)" is at the bottom.</p>
<p>B.</p>	 <p>Diagram B shows the Sun on the left, the Earth in the middle, and the Moon on the right, all in a straight line. The Sun is the largest circle, Earth is a medium circle, and the Moon is the smallest circle. The text "(Not to scale)" is at the bottom.</p>
<p>C.</p>	 <p>Diagram C shows the Sun on the left, the Earth in the middle, and the Moon on the right, all in a straight line. The Sun is the largest circle, Earth is a medium circle, and the Moon is the smallest circle. The text "(Not to scale)" is at the bottom.</p>
<p>D.</p>	 <p>Diagram D shows the Sun on the left, the Earth in the middle, and the Moon on the right, all in a straight line. The Sun is the largest circle, Earth is a medium circle, and the Moon is the smallest circle. The text "(Not to scale)" is at the bottom.</p>

9. The phase of the moon that follows the waning-crescent phase is the:
- A. Full moon
 - B. New moon
 - C. Waxing crescent
 - D. 3rd or last quarter
10. The sun reaches its highest point in the Northern sky (North of the equator) on the:
- A. Summer solstice
 - B. Winter solstice
 - C. Vernal Equinox
 - D. Autumnal Equinox
11. During a “leap year” we add an extra day to our calendar because:
- A. Earth takes 24 hours to rotate
 - B. The moon takes 27.3 days to orbit
 - C. Earth takes $365 \frac{1}{4}$ days to revolve
 - D. The moon takes 29.5 days to orbit.
12. Exceptionally high tides that occur during a full moon phase are called:
- A. Spring tides
 - B. Neap tides
 - C. High tides
 - D. Low tides
13. How many days are there in a Lunar month (new moon to new moon)?
- A. 27.2
 - B. 29.5
 - C. 30
 - D. 31
14. The approximate tilt of the moon’s orbit is:
- A. 15 degrees
 - B. 10 degrees
 - C. 5 degrees
 - D. 1 degree
15. Which of the following describes the theory of the moon’s formation?
- A. Our moon is an escaped moon from another planet
 - B. The moon was formed with the solar system from clouds of gas and dust
 - C. A giant asteroid hit the Earth and blew off a large piece which was caught in orbit
 - D. The moon was formed elsewhere and was caught by Earth’s gravity as it passed by
16. Earth rotates from...
- A. North to South
 - B. East to West
 - C. West to East
 - D. South to North

17. The moon has how many phases?
A. 6 B. 7 C. 8 D. 9
18. The spinning of Earth on its axis is called:
A. rotation
B. revolution
C. gravity
D. nuclear fusion
19. The pull of gravity on the surface of the moon is
A. six times that of Earth
B. one quarter that of Earth
C. one eighth that of earth
D. one sixth that of Earth
20. The strength of gravity depends on what two factors:
A. Distance and inertia
B. Distance and mass
C. Mass and the time of revolution
D. Inertia and mass
21. The moon's surface gets very hot in direct sunlight because
A. One side is always turned towards the sun
B. The moon has no liquid water to absorb the sun's energy
C. The moon has no atmosphere
D. Only some areas have crater walls to shield against sunlight
22. The current tilt of the Earth's axis is approximately
A. 22.1
B. 22.7
C. 23.5
D. 24.1
23. What makes it possible to see the moon from Earth?
A. The surface of the moon emits its own light, which can be seen from Earth
B. The moon absorbs light during the day and emits light at night
C. Light emitted by Earth illuminates the moon's surface, making it visible
D. Light emitted by the sun is reflected to Earth by the moon's surface
24. Gravity does all of the following except
A. Pulls anything on or near Earth towards Earth's center
B. Acts across space to hold the moon in its orbit around the Earth
C. Controls spontaneous combustion on Earth
D. Acts across space to hold the planets in their orbits around the sun

25. The different phases of the moon are caused by
- A. the days of the month
 - B. the position of the Earth in its orbit around the sun
 - C. the angle we see the sunlit side of the moon as it revolves around the Earth
 - D. the tide level of the oceans
26. What is the layer of the sun that we can see?
- A. The corona
 - B. The convection zone
 - C. The photosphere
 - D. The radiation zone
27. The sun creates its own energy through the process of
- A. Nuclear fusion
 - B. Combustion
 - C. Nuclear fission
 - D. Radiation
28. The sun's energy moves outward from the core through the
- A. Convection zone
 - B. Radiation zone
 - C. Photosphere
 - D. Chromosphere
29. Areas of cooler gas brought to the sun's surface through the convection zone are called
- A. Prominences
 - B. Solar flares
 - C. Solar wind
 - D. Sunspots
30. In nuclear fusion, two atoms of hydrogen are compressed to make one atom of
- A. Lithium
 - B. Helium
 - C. Boron
 - D. Carbon

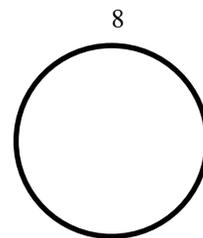
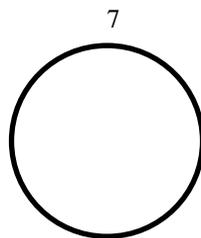
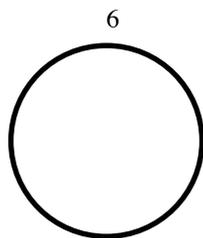
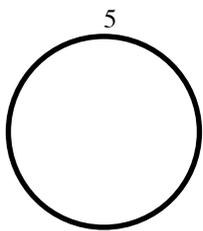
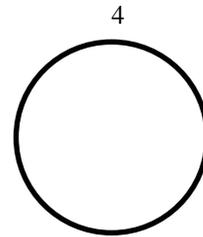
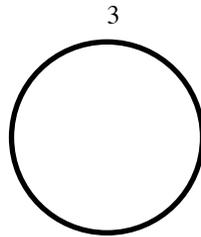
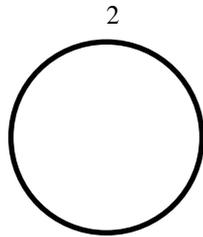
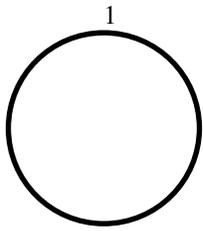
Name _____ Period _____ Date _____

SHORT ANSWER. Answer the following 10-point questions completely.

31. Name **two** types of eclipses that involve the Sun, the Moon, and Earth. (2 points)
- A. Identify the phase of the Moon during **each** type of eclipse you named in part (A). (4 points)
 - B. Choose **one** of the types of eclipses and draw a diagram that shows) the relative positions of the Sun, the Moon, and Earth that cause the type of eclipse you chose. Be sure to identify the type of eclipse you chose and remember to label the parts of your diagram including the Earth, moon, sun, umbra, and penumbra. (4 points)

31B.

32. Diagram and label the phases of the moon in order, starting with a new moon.



33. A. Describe the difference in tidal range between a spring tide and neap tide. (4 points)
B. Draw the relative position of the E-S-M during one of these tides and label which type you illustrate.
C. Explain the effect of gravity in your drawing.

33B.

34. Label the seasons diagram below A – D with the correct season. (4 points)
A. Describe at least two ways you could tell which spot is summer. (3 points)
B. Describe at least two ways you could tell which spot is winter. (3 points)

