Name:_____

Hour:_____ Date:_____

Chapter 22 Exam Study Guide

Multiple Choice

Identify the choice that best completes the statement or answers the question.

Write the letter that best answers the question or completes the statement on the line provided.

____ 1. The geocentric model of the solar system has the planets

a. and the moon orbiting the sun.
b. orbiting the sun and the moon orbiting Earth.
c. and the moon and sun orbiting Earth.
d. orbiting the sun and the sun orbiting Earth.

____ 2. What does the heliocentric model of the solar system state?

a. Earth and the other planets orbit the sun.
b. All of the planets and the sun orbit Earth.
c. Only the moon and Earth orbit the sun.
d. The planets orbit the Earth, which orbits the sun.

____ 3. Who was the first person to propose a heliocentric model of the universe?

a. Archimedes
b. Aristarchus
c. Ptolemy
d. Galileo

____ 4. After the Middle Ages, the astronomer who changed the model of the solar system by placing the sun at its center was

a. Galileo.
b. Ptolemy.
c. Copernicus.
d. Kepler.

____ 5. Which astronomer discovered that the planets orbit the sun in oval-shaped paths called ellipses?

a. Kepler
b. Brahe
c. Galileo
d. Archimedes

____ 6. Galileo's most important contribution to astronomy was his

a. discovery of evidence that the sun is the center of the solar system.
b. set of calculations of the size of each of the planets.
c. discovery of the planet Mars.
d. description of the behavior of moving objects.

____ 7. Isaac Newton was the first person to formulate and test the law of

a. universal gravitation.
b. acceleration.
c. orbital velocity.
d. universal mass.

____ 8. The spinning of Earth on its axis is called

a. revolution.
b. precession.
c. rotation.
d. perihelion.

____ 9. What is Earth's motion in its path around the sun called?

a. aphelion
b. rotation
c. precession
d. revolution

____ 10. What is precession?

a. the tilt of Earth's axis in relation to the ecliptic
b. the rotation of Earth as it moves around the sun
c. the faster orbital velocity of the planet at perihelion
d. the slow change in the direction in which Earth's axis tilts

____ 11. What causes the moon's phases?

a. the rotation of the moon on its axis
b. Earth's tilt on its axis as it revolves around the sun
c. changes in how much of the sunlit side of the moon faces Earth.
d. the position of the moon each month in relation to the North Star

____ 12. The cycle of the moon through its phases, or the synodic month, is

a. 21 days long.
b. 27 1/3 days long.
c. 29 1/2 days long.
d. 30 days long.

____ 13. A solar eclipse occurs when

a. Earth casts a dark shadow on the moon.
b. the moon casts a dark shadow on Earth.
c. Earth casts a dark shadow on the sun.
d. the sun casts a dark shadow on the moon.

____ 14. During a total lunar eclipse, the moon

a. moves into Earth's umbra.
b. moves into the sun's umbra.
c. moves into Earth's penumbra.
d. moves outside Earth's shadow.

____ 15. What causes the erosion of rocks on the moon's surface?

a. the eruption of lunar volcanoes
b. impacts of particles from space
c. weathering of wind-driven sand
d. the effect of ultraviolet radiation from space

____ 16. What is the soil-like layer on the moon's surface called?

a. maria
b. regolith
c. basalt
d. magma

____ 17. Long valleys or trenches associated with maria are

a. rays.
b. craters.
c. ejecta.
d. rilles.

____ 18. Which of the following is NOT present on the moon?

a. light
b. gravity
c. atmosphere
d. heat

____ 19. The most widely accepted model for the origin of the moon involves

a. the formation of the moon from dust and gas when Earth formed.
b. a large body hitting Earth and ejecting debris that became the moon.
c. the capture of the moon from Mars by Earth.
d. a large body hitting Mars and splitting off debris that became the moon.

____ 20. Which of the following lunar features is the oldest?

a. surface regolith
b. highlands
c. craters with rays
d. maria basins

Completion
Complete each statement.

Complete each statement on the line provided.

21. The geocentric model of the solar system was proposed by the astronomers of ancient _____.

22. The planetary system of Ptolemy had the planets moving in circular orbits around _____.

23. The _____ motion of planets is when they appear to move eastward among the stars, then stop and reverse direction.

24. The Danish astronomer _____ made precise measurements of the locations of bodies in the solar system, especially Mars.

25. The average distance between Earth and the sun is about _____ million km, or one _____ unit.

26. The mass of an object is a measure of the total amount of _____ it contains.

27. The Earth movement that causes night and day is called _____.

28. Earth is closest to the sun on about January 3 at _____ and is farthest from the sun on about July 4 at _____.

29. Because of _____, the North Star will no longer be Polaris in several thousand years.

30. The moon is closest to Earth at _____ and farthest away at _____.

31. Bright splash marks that radiate outward from craters for hundreds of kilometers are _____.

32. Most of the moon's surface is covered by _____, which are densely pitted, lightcolored areas.

Short Answer

In complete sentences, write the answers to the questions on the lines provided.

33. Summarize Kepler's three laws of planetary motion.

34. In your own words, list two principles stated in the law of universal gravitation.

35. **Applying Concepts** Why is it impossible for someone on Earth, even with a powerful telescope, to see the surface features that cover the whole surface of the moon?

36. Explain why eclipses do not occur much more frequently.

37. Describe the positions of the sun, moon, and Earth during a solar eclipse. Explain what people on Earth see and why.

38. What does a total lunar eclipse look like from Earth? Explain why.

39. **Comparing and Contrasting** Compare and contrast the formation of craters and maria.

Essay

In at least 3-5 sentences, answer the following question about Earth's moon.

40. Describe the sequence of events that formed the moon.