

Name: Key

Chapter 25 Review Sheet

Section 1

1. What is the geocentric model?

Earth is stationary while objects in the sky move around it

2. What is the heliocentric model?

Earth and the other planets revolve around the sun

3. The apparent motions of the sun, moon, and stars result from Earth's daily rotation on its axis

4. Gravity and Inertia keeps the planets in orbit around the sun.

5. True or False: The orbit around the sun is a circle. It is an ellipse

6. The plane of Earth's orbit is called the ecliptic plane.

7. What bodies make up the solar system?

Sun, planets, their moons and a variety of smaller objects that mostly revolve in the same plane as the sun

8. A moon is a relatively small natural body in space that revolves around a planet.

9. Mercury and Venus are the only two planets without moons.

10. What do astronomers use to describe distances within the solar system? Define this term.

Astronomical unit (Au) - equals the average distance from Earth to the sun 149,598,000 km

11. List three modern technologies that are being used to explore the solar system.

Complex telescopes, piloted spacecraft, space probes

12. A space probe is an unpiloted vehicle that carries scientific instruments into space and transmits information back to Earth.

13. The International Space Station is a permanent laboratory designed for research in space for various astronauts from different countries.

Section 2

14. True or False: The moon has a thick atmosphere.

15. True or False: The moon's surface temperature varies tremendously.

16. The moon has three major surface features.

a. Maria are low, flat plains formed by ancient lunar lava flows.

b. lunar highlands are rough, mountainous region surrounding maria.

c. craters are round depressions in the surface caused by the impact of high-speed meteoroids.

17. Why do most old craters still exist on the moon?

The moon has little erosion and no plate motion to alter craters

18. Scientists hypothesized that the moon formed after an enormous collision early in Earth's history.

19. The moon's phases are caused by changes in the relative position of the moon, sun, and Earth.
20. The moon cannot produce its own light, so where does the light come from? It reflects light from the sun.
21. phases are the different shapes of the moon visible from Earth.
- new moon – occurs when the moon is between the sun and Earth
 - full moon – occurs when Earth is between the sun and moon.
 - The shape of the moon is described as a crescent if less than half of the moon is lit.
 - The shape of the moon is described as gibbous if more than half of the moon is lit.
 - The term waxing means growing; while the term waning means shrinking.
22. A eclipse occurs when the shadow of one body in space, such as a planet or moon, falls on another.
23. True or False: Eclipses occur EVERY month during the new or full moon. not every month
24. A solar eclipse occurs when the moon casts a shadow on the portion of Earth's surface and occurs during the new moon.
25. A lunar eclipse occurs when Earth casts a shadow on the moon during the full moon.
26. tides are the regular rise and fall of ocean water.
27. What is the main cause of the tides?

differences in the moon's gravitational pull on earth

28. A spring tide is where the change between daily high and low tides is the greatest.
- Occurs during a new or full moon.
 - The moon, sun, and Earth are in a straight line.
29. A neap tide is where the change between daily high and low tides is the least.
- Occurs during the first quarter or third quarter moon.
 - The moon, sun, and Earth form a right angle.

Section 3

30. List the four inner solar system planets.

Mercury, Venus, Earth, Mars

31. Inner solar system planets are called terrestrial planets because they are similar in structure to Earth.

32. What characteristics do the inner solar system planets share?

- Small + dense
- Rocky surfaces
- Have crust, mantle, and core
- warmer
- few (if any) moons
- no rings
- smaller
- shorter revolution around Earth

33. Answer the following about Mercury:

- True or False: Mercury is the smallest of the terrestrial planets.
- True or False: There is no mantle convection and little erosion on Mercury.
- True or False: Mercury's surface temperature results in being extremely hot. temperature can be extremely cold as well
- True or False: Mercury has a thick atmosphere. thin to no atmosphere

34. Answer the following about Venus:



a. True or False: Venus has a thick atmosphere.

b. True or False: Venus's atmosphere is composed of nitrogen which traps heat. *Carbon dioxide not nitrogen*

c. True or False: Volcanos are found on Venus's surface.

d. True or False: Venus rotates in the direction opposite to which it revolves.

35. Answer the following about Earth:

a. True or False: Earth's surface has a suitable atmosphere and temperature range for water to exist as a liquid

b. True or False: Earth has a thin atmosphere composed of carbon dioxide gas. *thick atmosphere of nitrogen*

c. True or False: Earth has tectonic plates and erosion that continually changes its surface.

36. Answer the following about Mars:

a. True or False: Mercury rich rocks gives Mars a reddish color. *Iron*

b. True or False: Mars has a thin atmosphere composed of carbon dioxide.

c. True or False: The surface temperature on Mars is relatively cold compared to other terrestrial planets.

d. True or False: It is believed that Mars once had liquid water on its surface.

37. Asteroids are small, rocky bodies that are found orbiting the sun in the asteroid belt located between Mars and Jupiter.

38. True or False: Asteroids are only found in the asteroid belt.

39. Asteroids are remnants of what?

Remnants of the early solar system that never come together to form a planet

Section 4

40. List the four outer solar system planets.

Jupiter, Saturn, Uranus, Neptune

41. What characteristics do the outer solar system planets/gas giants share?

- Small, dense cores
- thicker atmospheres
- mostly hydrogen and helium
- colder
- farther from the sun
- larger & more massive
- no solid surfaces
- many moons
- rings
- longer revolution around the sun
- storms occur on surface

42. What two main gases make up gas giants?

hydrogen and helium

43. A ring is a disk made of many small particles of rock and ice in orbit around a planet.

44. Answer the following about Jupiter:

a. True or False: Jupiter is the largest and most massive planet.

b. True or False: The Great Dark Spot is a huge storm that can be found on Jupiter. *Great Red Spot*

c. True or False: Jupiter's moon Io is covered in ice. *not ice, volcanoes*

d. True or False: Jupiter's moon Europa contains liquid water beneath the ice that can be a likely place to support life.

45. Answer the following about Saturn:

a. True or False: Saturn has the biggest and most visible rings.

b. True or False: Saturn contains a small atmosphere composed of methane.

c. True or False: Saturn's most famous moon is Callisto. *Titan*

46. What is the most unusual characteristic of Uranus?

*Axis of Uranus rotation is tilted 90°
NOT color*

47. The gas methane, gives both Uranus and Neptune its blue/green coloring.
48. Neptune's most famous moon is known as Triton which has an icy surface.
49. How is a dwarf planet similar to a planet? How is it different?

Similar: spherical and orbits sun directly

Different: its orbit/path around the sun is not clear of debris

50. Pluto, which used to be the 9th planet, was later reclassified as a dwarf planet.
51. True or False: Charon, Nix, and Hydra are all moons of Pluto.
52. Comets are dust pieces of ice and rock that partially vaporize when they pass near the sun.
53. Meteoroids are the oldest remnants of the early solar system.
54. Radioactive dating on meteoroids estimated that the solar system is about 4.6 billion years old.
55. The Kuiper belt is a doughnut shaped region located past Neptune about 100 AU and contains Pluto.
56. The Oort Cloud is a very sparse sphere of comets that encircle to solar system about 50,000 AU.

Section 5

57. What is the nebular theory? States that the solar system formed from a rotating cloud of dust and gas
58. A Solar nebula is a large, thin cloud of dust and gas that eventually formed out solar system.
59. True or False: The solar nebula formed from the material expelled by previous stars.
60. Put the following events in the correct order:
- 2 a) Solar nebula spins faster
 - 4 b) Solar nebula flattens out and form protoplanetary disk
 - 5 c) Density and temperature in protoplanetary disk increases
 - 1 d) Shock wave from explosion of nearby star causes solar nebula to collapse.
 - 6 e) Temperature increases enough for nuclear reactions to begin and sun is born
 - 3 f) Solar nebular spins fast enough for gravitational attraction to pull enough particles towards it
61. True or False: Nearly all of the mass of the solar nebula becomes concentrated near the center.
62. The center of a solar nebula eventually becomes the Sun.
63. planetesimals were asteroid like bodies that eventually combine to form protoplanets, which form the current planets.
64. accretion is a process of adding mass to growing planetesimals.
65. Terrestrial planets are relatively small and rocky because the inner solar system was too hot/cold so ice forming compounds could/could not condense while rocky materials could/could not condense.
66. Gas giants are large with low densities because outer solar system was too hot/cold so ice forming compounds could/could not condense.