Name _____ Date _____ Period _____ 41

# ESS.1 UNIT TEST STUDY GUIDE

Directions - answer the questions to help you prepare for the unit test next class.

**Early Calendars**

Provide a definition for each of the following vocabulary words:

1. Calendar
2. Month
3. Year
4. Day
5. Leap Year
6. Why did our ancient ancestors create structures like Stonehenge and The Medicine Wheel?
7. Why did our ancient ancestors interpret things like constellations differently than other cultures?

**Early Astronomy**

8. List some patterns our ancient ancestors observed in the night sky.
    a.
    b.
    c.
9. Where did our ancient ancestors originally place the Earth in the Universe?
10. Who was the first early scientists to mathematically support the geocentric (Earth-Centered) universe?
11. Which ancient culture could predict eclipses better than others?
12. Which ancient culture invented algebra, astrolabes, and the number system we use today?
13. Which scientist was the first to introduce the heliocentric (sun - centered) universe theory?

**Technology and Space**

14. What invention allowed early astronomers to see things in the Universe, they were not able to see before?
15. What is an optical telescope?
16. What is a non-optical telescope?
17. What type of telescope uses mirrors?
18. What type of telescope uses lenses?

**Nebular Theory**

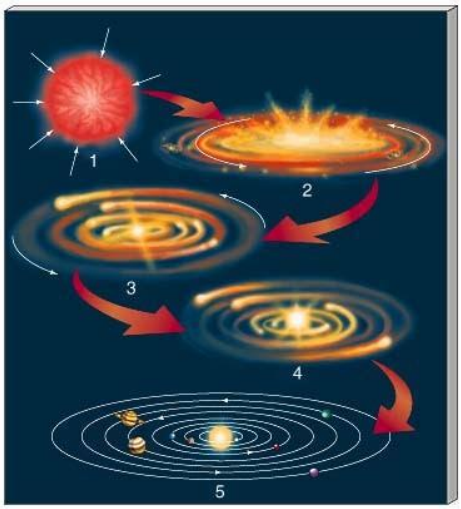
19. What is a nebula?

20. Explain accretion.

21. What force may cause a nebula to begin spinning?

22. As a nebula spins, faster and faster, what force causes most of the gas and dust to move towards the center?

Use the diagram to identify the 5 main steps of the nebular theory.




23. Step 1 -

24. Step 2 -

25. Step 3 -

26. Step 4 -

27. Step 5 -

28. How does the nebular theory describe how our solar system formed?

29. As a nebula begins to spin, where does most of the gas a dust go?

**Other Objects in the Solar System**

30. List the 4 inner/terrestrial planets.
    a.
    b.
    c.
    d.
31. List the 4 outer-gas giant planets.
    a.
    b.
    c.
    d.
32. List the 5 accepted dwarf planets.
    a.
    b.
    c.
    d.
    e.
33. Which major planet is the windiest and has geysers that erupts nitrogen gas?

34. Which planet is tilted on its side and made mostly of methane?

35. Which major planet has the most moons and is known for a hurricane like storm called the great red spot?

36. Which planet has the largest rings that are easy to see with a simple telescope?

37. Which planet is the only one where water is found in all three states (phases)

38. Which planet is considered Earth's twin, as it has a similar mass and size?

39. Which major planet is considered a dead planet as it has many craters and no real atmosphere?

40. Which major planet has the largest known volcano in the solar system and a red surface?

**Stars**

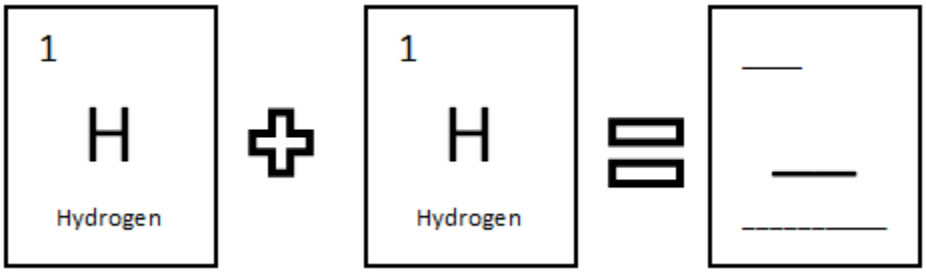
41. How do all stars begin?

42. What event created elements 1 & 2 on the periodic table?

43. What event creates elements 3 - 26 on the periodic table?

44. What event creates the rest of the elements on the periodic table?

45. What is created by the fusion of 2 hydrogen atoms in a star?




46. Explain how the periodic table of elements is related to stars.

47. Which layer of our star, the Sun, do we see?

48. Which layer of the sun is where nuclear fusion occurs?

49. Explain why it takes energy from the core millions of years to travel through the radiative zone of the sun.

50. What determines the life cycle of a star?

51. Give the sequence for the life cycle of a low mass star.

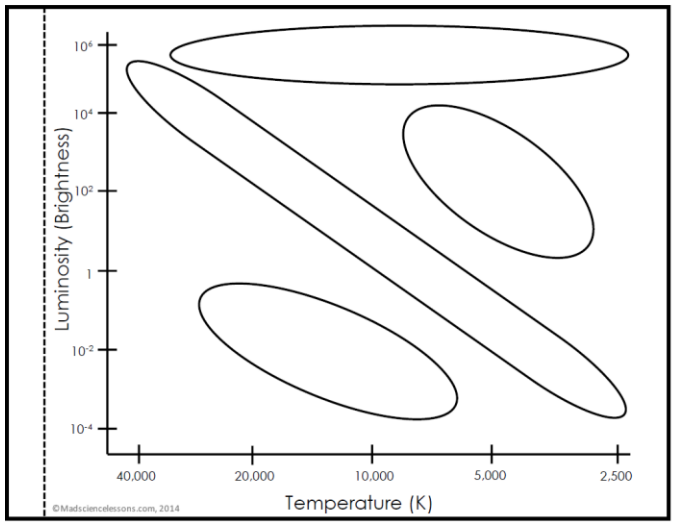
52. Give the sequence for the life cycle of a high mass star.

53. Identify where each of the 4 main types of stars are located on a HR Diagram

54. What type of star is our sun in the HR Diagram?

55. Explain why the surface area of a star is influenced by the size of the star.

56. Explain how temperatures of stars influence the color of the star.




57. What can scientists learn about a star by observing its emission spectrum?

**Big Bang Theory**

58. What is the big bang theory?

59. Describe the 5 main steps of the big bang theory.
    a.
    b.
    c.
    d.
    e.

60. Describe the 3 main pieces of evidence that support the big bang theory.
    a.
    b.
    c.

61. Explain how the Doppler Effect shows stars and galaxies are moving away from the Earth.

62. Measurements of light from a nearby star were made. Doppler analysis was performed and the spectral lines in Figure B were observed. The observation is showing a _____ shift from a nearby star in Figure B.

(Figure A – top - spectral control)
(Figure B – bottom - spectral lines from a nearby star)