2nd Semester Exam
Study Guide

1. Describe the relationship between our solar system and the Milky Way galaxy.

2. List the correct ordered from smallest to largest: solar system, star, universe, galaxy
   star – solar system – galaxy – universe

3. A student looked at the sky at the same time on several different nights. He noticed one bright point of light in the sky that changed position each night compared to other objects in the sky. After a month, the bright point of light changed direction and appeared to be traveling opposite its original direction. The bright point of light is most likely a **planet**

4. Why do planets stay in orbit around the Sun? **because of an attraction from gravity**
5. The pull of gravity from Earth has the greatest effect on **the Moon.**
6. To lift off from Earth, a rocket needs to overcome **Earth's gravity.**
7. Which of these actions is not influenced by Earth's gravity: rain falling to the ground, an apple falling from a tree, the moon revolving around Earth, or a magnet lining up in a North-South direction. **a magnet lining up in a North-South direction**
8. Sometimes, large meteoroids enter the atmosphere of Earth and reach the ground. Scientists identify possible impact sites when they find **bowl-shaped craters**
9. Which statement is true about all comets: they orbit Earth, they orbit the Sun, they are sources of light, or they are sources of heat. **They orbit the Sun.**
10. What feature can be found on the surface of both the Earth and the Moon?
    mountains
11. A meteorite becomes a meteoroid when it **impacts the surface of a planet.**
12. Drawing the orbit of the Moon around the Earth.

13. In July, the constellation Scorpius is easily seen at night, but in January, Scorpius is not visible. What happened to Scorpius in January? Earth's position has changed so it can no longer be seen.
14. Which of these best describes when a lunar eclipse will occur: when Earth is between the Moon and the Sun, when the Moon passes between Earth and the Sun, when the Sun is between Earth and the Moon, or when Earth is at a 90° angle to the Moon and the Sun. **when Earth is between the Moon and the Sun**
15. Approximately how long does it take the moon to complete one orbit around Earth? **one month**
16. What occurs due to the rotation of Earth? **day and night**

17. Draw the stages of a Solar Eclipse.

18. What condition must exist for a solar eclipse to occur? **The Moon is between Earth and the Sun**
19. What is the major cause of seasonal changes? **tilt of the Earth's axis**
20. What is the process by which water vapor cools and changes into tiny liquid droplets suspended in the air? **cloud formation**
21. What occurs during condensation? **water vapor changing into a liquid**
22. What occurs during transpiration? **evaporation of water into the atmosphere from the plants.**
23. One characteristic that is unique to water is that it **exists naturally in three states on Earth.**
24. What steps in the water cycle most directly cause floods? **precipitation and runoff**
25. Which factor has the greatest effect on a community's stores of freshwater: the location of the nearest ocean, the average annual rainfall, the location of the nearest mountain, or the average winter temperature? **the average annual rainfall**
26. Draw the water cycle. Label – condensation, evaporation, groundwater, precipitation, runoff, transpiration and describe how the water moves through each state and the role that sunlight plays in the water cycle. (Separate sheet of paper)
27. In an investigation, water in a beaker is placed on a hot plate. As the water is heated, the cooler, denser water at the surface sinks and pushes the warmer water to the top. What does this most likely represent? **convection currents**
28. The gravitational pull between the Moon and Earth affects conditions here on Earth even though the Moon has about 1/80 the mass and about 1/4 the diameter of Earth. If the Moon was about the same size and mass of Earth, which would most likely occur: there would be smaller tides on Earth, there would be bigger tides on Earth, objects would weigh more on Earth, or objects would weigh less on Earth. **There would be bigger tides on Earth.**
29. Hurricanes form over water and lose wind speed when they move over land. What does this pattern best illustrate? **Oceans transfer more energy to the atmosphere than land does.**
30. In the United States, lightning occurs most often in Florida. What is the cause of lightning? **discharge between rain clouds and Earth**
31. What is the main cause of global wind patterns? **uneven heating of Earth**
32. A city had high heat at noon and then cool temperatures, high winds, and thunderstorms in the evening. What best describes the change? **weather**
33. Denver, Colorado is located in the Rocky Mountains and St. Louis, Missouri is located on the Mississippi River. They are at about the same latitude. Why does Denver have a cooler climate than St. Louis? **Denver is at a higher elevation than St. Louis**
34. Rain falls on the side of a mountain range. What is the main source of water for the rain falling? **water evaporating from the ocean**