**ES104 Lab Video Exercise – Introduction to Earth Science, Water, and the Hydrologic Cycle NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Part 1. Introduction to Earth System Science.** Watch the Introduction to Earth Science video on the class web site, located at the following URL:

<https://www.youtube.com/watch?v=N3EqcUNdIl8>

The video is about 7 minutes in duration, watch and answer the following review questions.

1. List the four fundamental spheres of the Earth System.
2. Describe and define the terms “reservoir” vs. “flux” in terms of Earth Systems science.
3. True or False: global glaciation results in global sea level rise.
4. List the major chemical components of the lower atmosphere, with percent compositions.
5. True or False: carbon dioxide content in the atmosphere has steadily increased over the past 50 years of Earth History.
6. True or False: the shells of marine organisms are comprised of the mineral calcite, which stores carbon dioxide in its crystal structure.
7. What is the primary process that transfers carbon dioxide from the atmosphere to the biosphere?
8. True or False: the atmosphere contains the highest amount of global carbon out of the four spheres.
9. True or False: the rocks of Earth in the Geosphere contain the highest amount of global carbon out of the four spheres.
10. List the three learning objectives of the video, and provide a brief comment on your understanding of the concepts.

**Part 2. Quick Tour of the Solar System.** Watch the video on the class web site, located at the following URL:

<https://www.youtube.com/watch?v=evWeRHMwSu0>

The video is about 14 minutes in duration, watch and answer the following review questions.

1. True or False: the sun is the most massive object in our solar system.
2. Which planet is the largest in our solar system?
3. How long does it take light to travel from the sun to the Earth?
4. How long does a mercury year last in earth days?
5. True or False: the surface of mercury is very smooth.
6. What is the daily temperature range between day and night on mercury?
7. What is the atmosphere of Venus mainly composed of?
8. What are the average surface temperatures associated with venus?
9. True or False: venus is covered by abundant liquid water.
10. Which planet in the solar system is best known as the “water planet”?
11. True or False: the earth as a planet is very static and non-changing over time.
12. True or False: planet earth is devoid of biologic life.
13. What is the name of the largest valley on Mars?
14. True or False: Mars has a very active atmosphere and weather system.
15. True or False: all of Mars is very heavily cratered.
16. True or False: Mars has surface features indicative of the presence of ancient liquid water.
17. True or False: between Mars and the outer solar system is a massive asteroid belt.
18. True or False: Saturn is the largest planet it the solar system.
19. How many moons surround Jupiter?
20. True or False: the moons of Jupiter are very diverse and interesting.
21. What is the distinguishing characteristic of Saturn?
22. How many moons surround Saturn?
23. True or False: the moons of Saturn are very diverse and interesting.
24. What is the distinguishing characteristic of Uranus’ rotational axis?
25. True or False: much is known about Uranus and it’s moons.
26. True or False: Neptune has high heat flow from the sun and intense hot desert conditions.
27. True or False: much is known about Neptune and it’s moons.
28. True or False: Pluto is still the biggest, baddest planet in the solar system.
29. What is your favorite planet in the solar system and why?