Marine Biology Study Guide

“Chemical and Physical Properties of Seawater and the World Ocean”

Dr. Altstiel, Room 107

Naples High School

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*The following questions are designed to help prepare you for the upcoming Chapter 3 Exam. Read each question carefully. You may use the textbook, your notes, and/or the internet for assistance, if needed.*

1. Define matter.
2. Concerning water’s uniqueness, list the three qualities water has that is higher than any other naturally occurin substance.
3. What benefit does water serve by being relatively transparent?
4. Name three gasses dissolved in seawater.
5. How do the gases you named in problem 4 get into the seawater?
6. What is the cause of waves?
7. What determines the size of waves?
8. What is the main cause of surface currents?
9. Explain the Coriolis Effect.
10. Compare and contrast “down-welling” and “upwelling.”
11. Define tide.
12. Explain a spring tide.
13. Explain a neap tide.
14. Explain why water is such a good solvent.
15. Ocean water has solutes dissolved in water. What do we call the level of solutes in ocean water?
16. Why is water a liquid?
17. Finish the following sentence: Water is the only substance on earth that \_\_\_\_\_\_
18. Is cold water or warm water denser? Explain.
19. What happens to water’s density in its solid state?
20. What is meant by “water has a high latent heat of melting?”
21. What is the normal salinity of seawater?
22. What are the main solutes dissolved in ocean water?
23. Name four factors that change as depth increases in the ocean.
24. What is the highest point of a wave called?
25. List the three stratified layers of the ocean. At what depth is each found?
26. What causes tides to rise and fall?
27. How do tides benefit marine organisms?
28. What is meant by “water has a high heat capacity?”
29. How is salinity measured?
30. If the salinity of a sample of seawater is 28 ppt, what does this mean in grams of salt?
31. What is the quality of the transparency of water called?
32. Where do the solutes found in seawater come from?
33. Circulation in the ocean is significantly driven by \_\_\_\_\_\_\_\_\_\_\_ patterns, which is ultimately driven by \_\_\_\_\_\_ energy.
34. Winds created at the equator are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
35. What are the winds in the mid latitudes called?
36. Define semidiurnal tides.
37. Name three features that affect the number and size of tides.
38. What type of bond causes the attraction of one water molecule to another?
39. Why is the high heat capacity of water great for marine organisms?
40. What is the lowest point of a wave called?
41. Explain the meaning of a wavelength with respect to waves in the ocean.
42. What is a wave period?
43. What is the reasoning behind calling people who ride waves on a board, surfers? Explain.
44. Due to the rotation of the earth, how are winds and currents deflected in the northern hemisphere?
45. In the southern hemisphere? (referring to rotation of earth and deflection of winds and currents).
46. What term is given for currents that travel in circular patterns?
47. What affects the amount of difference between the high tide and low tide (tidal range)?
48. Define a molecule.
49. What do we call the amount of water vapor in the air?
50. How do organisms survive living in waters in areas where freezing temperatures are common?