

Marine Biology Semester 1 Final Study Guide

The final exam will consist of 80 multiple choice questions. Use notes, text books, homework, and reading assignments to answer the following questions. This study guide is due on the day of the final as homework credit. **You will be allowed to have one page of notes on the final – they must be hand written.**

1. What are the 3 biggest marine labs in the U.S. and which one is closest to Murrieta?
2. Describe the structure of a water molecule.
3. What is the position of water molecules to each other in gas, liquid, and solid states.
4. What does ice float?
5. What oceanographic tool is Jacques Cousteau known for inventing?
6. Define scientific hypothesis. Define scientific theory
7. Identify the 5 steps to the scientific method
8. What are variables? Give examples
9. How much of earth is covered in oceans? How much is freshwater?
10. Compare the amount of land and water in the northern vs. southern hemispheres.
11. Rank the 4 main oceans in order of deepest to shallowest
12. Rank the 4 main oceans in order of largest to smallest.
13. What is the equation for density?
14. Describe the characteristics of the earth's core and mantle.
15. Define the following features: rift, mid-ocean ridge, hydrothermal vent.
16. What is a control in a scientific experiment?
17. What is the average range of salinity in the ocean?
18. Explain what causes tides.
19. Where does the salt in the oceans come from?
20. What wavelengths of light penetrate water the furthest?
21. What are the 4 parts of wave anatomy? Describe the location of each.
22. What do waves transport while moving?
23. How does pressure increase with depth (ex. How many atm of pressure would be at 50 feet in depth)
24. State the rule of constant proportions.
25. Describe gyres. Explain the characteristics of eastern and western boundary currents
26. Identify the eastern and western boundary currents in each of the 5 main gyres.
27. What is the smallest particle of matter?
28. What ions have the highest concentration in the ocean's salinity?
29. What does a secchi disk measure?
30. How does the Coriolis Effect affect currents in the northern hemisphere?
31. Define thermocline, halocline, pycnocline.
32. Define upwelling and downwelling.
33. What is El Nino? What causes it to occur?
34. Draw and label the parts of the ocean floor.
35. Describe oceanic and continental crust.
36. Describe the following wind belts: trades winds, westerlies, polar easterlies
37. Define heat capacity and latent heat. What is the heat capacity of water?
38. What are the boiling and freezing points of water?
39. What are waves? Describe the 3 types of progressive waves. Which type are ocean waves best categorized?
40. Identify the following on a wave diagram: crest, trough, wavelength, wave height, depth of negligible water movement.
41. How do you determine the speed of a wave?
42. Define wave period and wave frequency.
43. What are the disturbing and restoring forces for capillary waves, gravity wind waves, tsunamis, and tides?
44. Describe the differences between shallow and deep water waves?
45. Explain the 3 factors that determine wave height. What is a fully developed sea?
46. What factors cause a wave to break? Describe the 3 types of breaking waves.
47. Explain the causes of tsunamis and why they are considered shallow water waves. Why don't ships in the open sea feel tsunamis, and what happens when they (tsunamis) hit land?
48. What causes tides to occur?
49. Describe the cause and types of tides that occur during neap tides and spring tides.
50. What are the 3 patterns of tides? Where in the United States does each type occur?