

Name: _____

Marine Science Final Review 2017

Provide a short answer to the following questions.

1. Define marine science and oceanography. Include the four main branches of oceanography.
2. Name the world's oceans.
3. How is a hypothesis different from a theory?
4. Who mapped the Gulf Stream?
5. What navigational tool helped sailors in the mid 1400s?
6. What noted naturalist sailed with the H.M.S. Beagle expedition? How did this naturalist explain the formation of coral reefs? What theory did this person propose as a result of his observations during the expedition?
7. Draw a diagram illustrating the pelagic zone and its subdivisions.
8. Draw a diagram illustrating the benthic zone and its subdivisions.
9. Describe the formation of Earth and its layers.
10. How do plate tectonics create the ocean basin? What is a mid-ocean ridge?
11. Draw a water molecule. Explain how water molecules bond to each other. What makes water a polar molecule?
12. Hydrogen bonds are the result of attraction between:
13. What properties make salt water different from freshwater.
14. Explain how sound behaves in water. How do some marine organisms take advantage of sound's behavior in water?
15. Explain how salinity, temperature, and density relate.
16. Explain how water scatters and absorbs light.
17. How much water covers the earth's surface?
18. What causes tides?
19. What causes waves?
20. What causes tsunamis?
21. What is Coriolis?
22. How do hurricanes spin? What causes them? What do they need to form?
23. What do currents transport?
24. What is El Nino and why does it happen?
25. What are the differences between erosional and depositional coasts?
26. How do coral reefs form? What are the three types?
27. What is the difference between photosynthesis and chemosynthesis?
28. Review the theories of the origin of life and evolution (and the age of the Earth)
29. -Review the differences between heterotrophs and autotrophs; different levels of consumers
30. -Review the lifestyles (plankton, nekton, neuston, benthic) and zones of the ocean including pelagic, benthic, abyssal, neritic and intertidal
31. -Review the plankton including zooplankton, phytoplankton, meroplankton, holoplankton
32. -Review the neuston, and the differences between pelagic and benthic animals
33. -Review food pyramids and energy flow through living systems. Define biogeochemical cycle and the flow of each one.
34. -Review the Linnaeus classification system (including why scientists classify organisms and the Six kingdom system and the Three-domain system).
35. -Compare prokaryotic and eukaryotic cells
36. Review the terms ecosystem (abiotic and biotic factors), habitat, population, community and niche, predation, competition and the types of symbiotic relationships
37. Review the major characteristics for the Phyla: Porifera, Cnidaria, Mollusca, Arthropoda and Chordata. Know examples of organisms from each phylum.
38. How are invertebrates different from vertebrates?
39. Which organisms have an exoskeleton vs. endoskeleton?
40. What is a cartilaginous organism? What is a gelatinous organism?