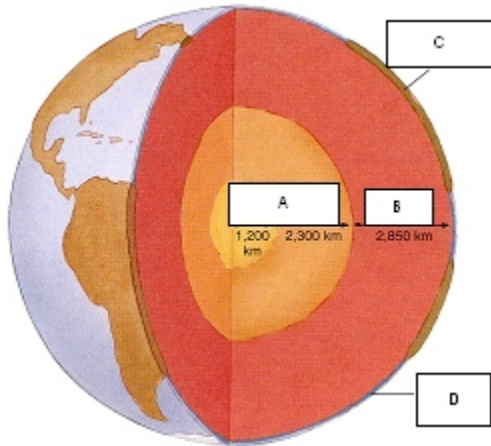


Marine Biology

Worksheet I

The Sea Floor(2), Chemical and Physical Features of the Ocean (3),
and The Fundamentals of Biology(4)

1. What are the names of the world's 4 large ocean basins? List them from largest to smallest.
2. The ocean covers _____ percent of the planet
3. Identify regions A - D on the diagram of the earth below:



- A. _____
- B. _____
- C. _____
- D. _____

4. The lithosphere includes what two regions on the diagram of the earth?
_____ and _____

4. List 5 differences between continental and oceanic crusts.

Continental

Oceanic

5. Define the terms:

A. Density

B. Pangea

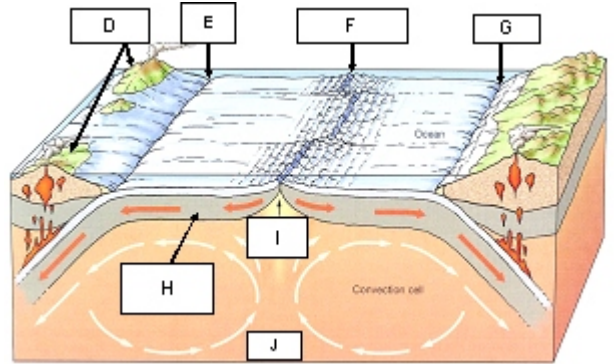
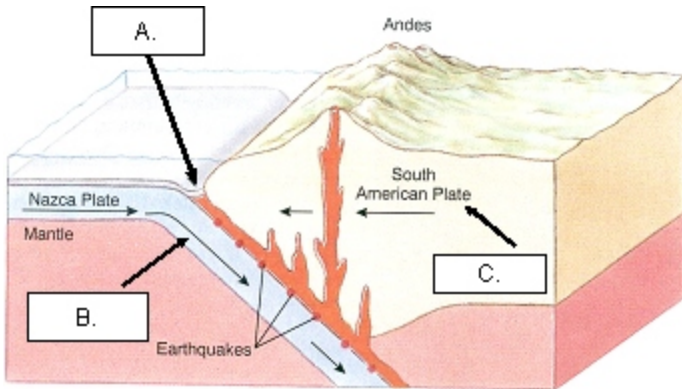
C. Tethys Sea

6. Where is:

A. New crust created? _____

B. The earth's crust destroyed? _____

7. Identify regions A - J on the diagrams below:



A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

J. _____

8. Define and give an example of:

A. Divergent boundaries

B. Convergent boundaries

C. Transform boundaries

9. What are the 4 major sources of evidence for the theory of plate tectonics?

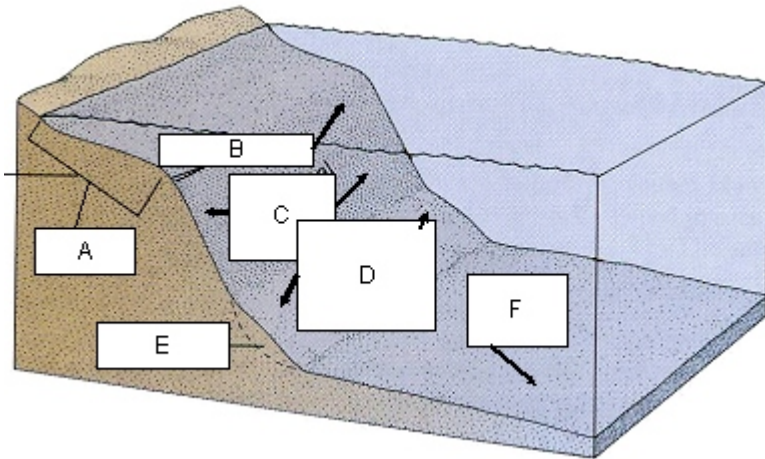
A. _____

C. _____

B. _____

D. _____

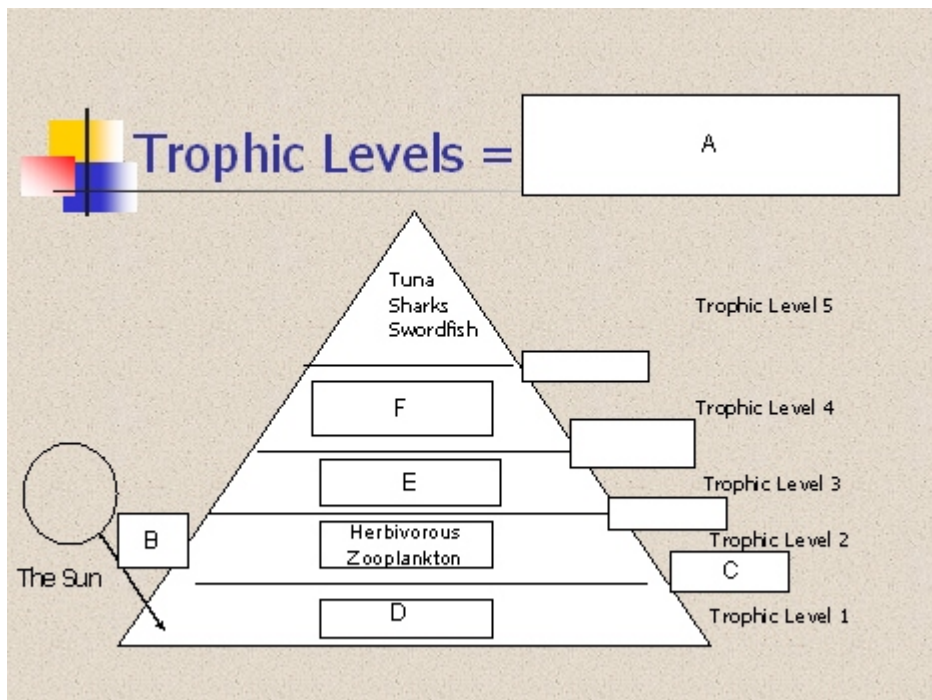
10. Identify regions A - F on the diagram below:



- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____

11. Compare and contrast active versus passive margins of continents.

12. Identify A - F on the diagram below:



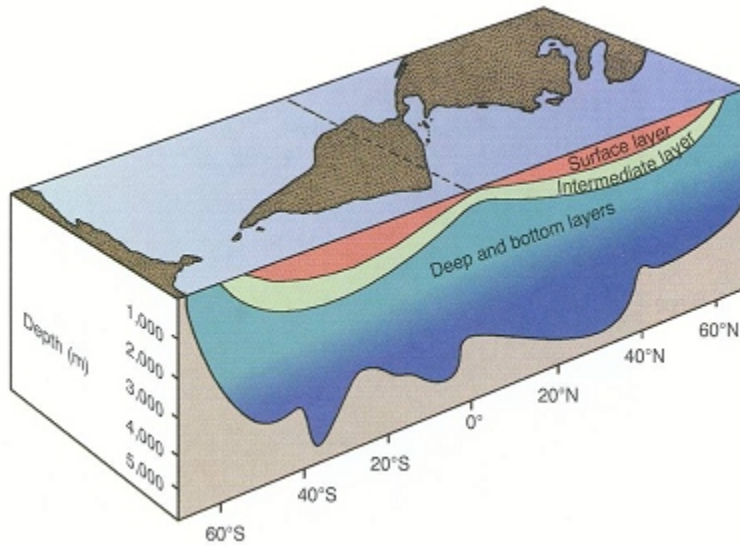
- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____

How many pounds of **D** on the diagram would it take to create a 10 pound tuna?

13. Define the following terms:
- A. Osmolality
 - B. Ion
 - C. Brownian Movement
 - D. Solute
 - E. Solvent
14. What are the three phases of water? How does density vary with each phase?
15. How the following factors affect the density of sea water?
- A. An increase in temperature: _____
 - B. An increased in salinity: _____
 - C. A decrease in temperature: _____
 - D. High evaporation rates associated with high air temperatures at tropical latitudes.

 - E. Cold air temperatures near the arctic circle. _____
Why? _____
16. What color of sunlight penetrates the deepest in the ocean? What color penetrates the least?

17. Explain how the following diagram related to getting oxygen in the deep ocean



18. The earth

- A. Rotates to the _____
- B. Makes one complete rotation in _____ hours
- C. Is widest at the _____

19. Due to the Coriolis Effect, objects in the northern hemisphere are deflected to the? _____

20. Explain why there is a low pressure zone at the equator.

21. Why are the eastern sides of continents associated with warmer ocean water temperatures than the western sides of continents?

22. How long is a lunar day? Why does it differ from a typical 24 hour day?
23. Discuss the difference between neap tides and spring tides.
24. Draw and label a tidal curve representing a typical lunar day on our coastline.
25. Describe the difference between:
- A. Potential and Kinetic Energy
 - B. Producers and Consumers
 - C. Plankton and Nekton
 - D. Herbivore and Carnivore
 - E. Phytoplankton and Zooplankton
 - F. Photosynthesis and Cellular Respiration
 - G. Mitochondria and Chloroplasts
 - H. Heterotrophs and Autotrophs
 - I. Thermocline and Pycnocline

26. Draw a pyramid of biomass for an ecosystem that has 500,000 pounds of phytoplankton. Label the energy efficiencies at each step. The following levels should be included in your pyramid: carnivorous zooplankton, herbivorous zooplankton, large carnivorous fishes, small carnivorous fishes, and phytoplankton. Don't forget to include the sun in your diagram.

27. Matching:

- | | |
|--|-----------------------|
| (1) _____ Glucose | A. Ammonia |
| (2) _____ Lactose | B. Anabolic |
| (3) _____ Fructose | C. Catabolic |
| (4) _____ Starch | D. Cellulose |
| (5) _____ Storage form of glucose in animals | E. Chitin |
| (6) _____ Plant cell walls | F. Disaccharide |
| (7) _____ Exoskeleton in arthropods (crabs, etc) | G. DNA |
| (8) _____ Fats, oils, and waxes | H. Glycogen |
| (9) _____ Composed of amino acids | I. Lipid |
| (10) _____ Nitrogenous wastes in sharks | J. Monosaccharide |
| (11) _____ Nitrogenous waste in most fishes | K. Polysaccharide |
| (12) _____ Nucleic acid | L. Primary production |
| (13) _____ Reaction in which chemical bonds are broken | M. Protein |
| (14) _____ Reaction that requires energy | N. Starch |
| (15) _____ Measure of the rate of photosynthesis | O. Urea |

28. List the equation for:
- A. Photosynthesis
 - B. Cellular respiration
29. Describe at least 3 differences between prokaryotic and eukaryotic cells.
30. Describe at least 3 differences between plant and animal cells.
31. What are chromosomes composed of, what is their significance, and where are they found in the cell?
32. What are two differences between the smooth endoplasmic reticulum and the rough endoplasmic reticulum?
33. Describe the difference between diffusion and osmosis.
- A. Diffusion is the _____
 - B. Osmosis is the _____

 - C. The difference between diffusion and osmosis is that _____

34. Red Blood cells are placed in the following solutions:



I: Distilled water

II: 25% NaCl

III: 0.9% NaCl

- a. Which solution is hyposmotic? _____
- b. Which solution is isosmotic? _____
- c. Which solution is hyperosmotic? _____
- d. Which cell would gain water by osmosis? _____
- e. Which cell would lose water by osmosis? _____

35. What are the **functions** of:

- A. The golgi complex
- B. The mitochondrion
- C. Chloroplasts
- D. Chlorophyll
- E. Enzymes
- F. Exocytosis
- G. Phagocytosis