Name: _____ Period _____ Date: _____

EES – Oceanography Study Guide

Circle the letter of the choice that best answers the question.

1. About what percentage of seawater is dissolved salts?

a. 96.5 percent **b.** 9.65 percent **c.** 3.5 percent **d.** 35 percent

2. Which of the following salts is most abundant in seawater?

a. sodium chloride
b. magnesium sulfate
c. potassium chloride
d. calcium chloride

3. What is salinity?

a. the amount of dissolved salts in seawater
b. the amount of water in the oceans
c. the amount of dissolved gases in seawater
d. another name for salt

4. What unit is commonly used to measure the salt content of water?

a. parts per liter
b. grams per liter
c. kilograms per cubic liter
d. parts per thousand

5. In addition to salts, which of these substances is dissolved in seawater?

a. sugars **b.** nutrients **c.** shells **d.** seaweed

6. Which of the following would cause surface ocean water to have a higher salt content?

a. a river flowing into the ocean
b. the melting of sea ice
c. high rates of evaporation and low rates of precipitation
d. low rates of evaporation and high rates of precipitation

7. What evidence indicates that the salt content of ancient oceans was about the same as it is today?

a. seafloor sediments
b. comparisons of modern seashells and fossil shells
c. ancient lava flows that formed in seawater
d. salt content in surface water versus the salt content in bottom water

8. Which process does NOT add salts to seawater?

a. weathering of crustal rock
b. decay of hard-shelled sea creatures
c. volcanic gases
d. flow of rivers into the ocean

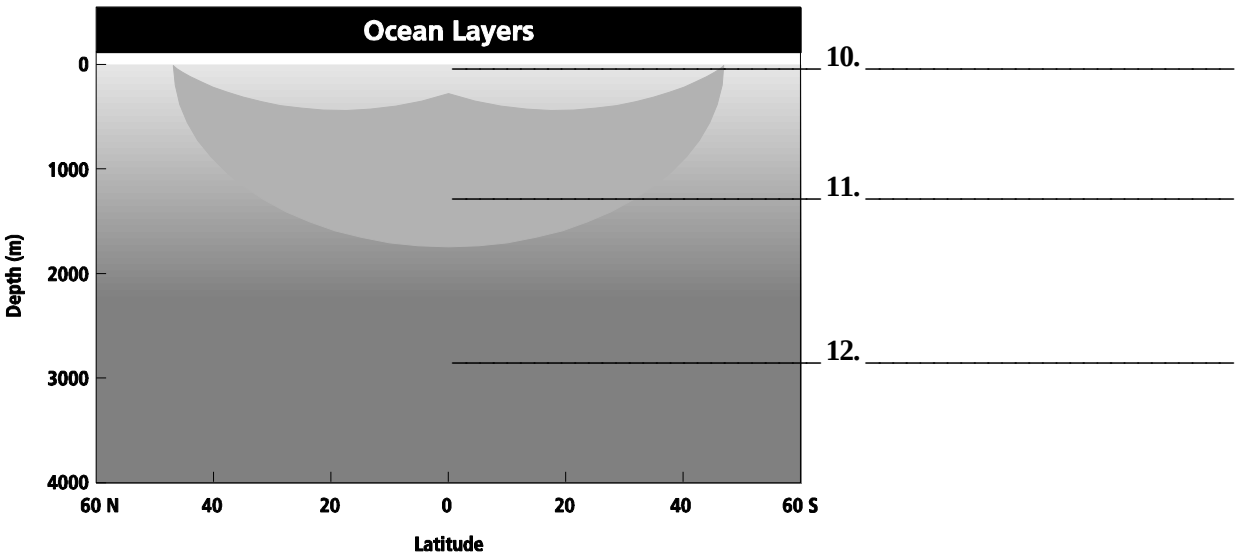
9. Which process removes salt from seawater?

a. ultraviolet radiation
b. weathering of feldspars
c. incorporation of ions in marine organism's shells, bones, and teeth
d. consumption of sediments by bottom-feeding organisms

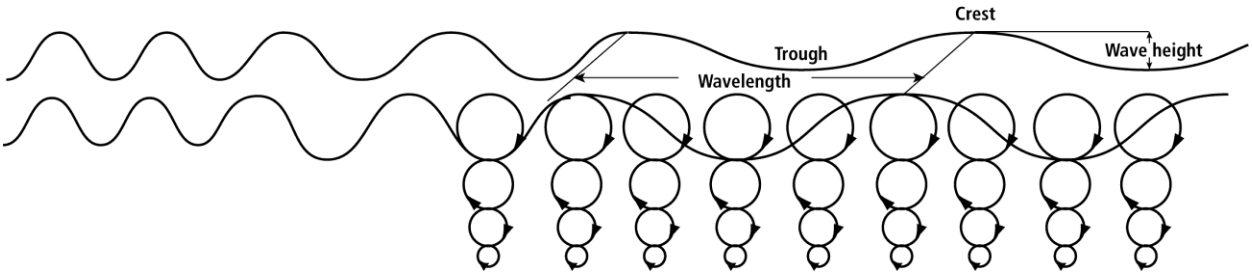
Name _____

Use the terms below to label the diagram of ocean temperatures.

surface layer **bottom layer** **thermocline**



Use the diagram to answer the following questions.



1. Describe the rhythmic movement of a wave. What is the direction of its energy?

_____

_____

_____

2. What is the highest point of a wave called?

_____

3. What is the lowest point of a wave called?

_____

4. What is the vertical distance between the highest and lowest points of a wave?

_____

5. What is the horizontal distance between the top of one wave and the top of the next?

_____

Name _____

6. What is the relationship between the wave speed in deep water and wavelength?

_____

7. How does an ocean wave become a breaker at the shoreline?

_____

_____

_____

_____

_____

_____

For each item in Column A, write the letter of the matching item in Column B.

Column A	Column B
_____ **8.** Periodic rise and fall of sea level	a. gravitational forces
_____ **9.** Difference between high tide and low tide	b. spring tides
_____ **10.** Forces exerted by the Sun and the Moon that generate tidal bulges	c. neap tides
_____ **11.** Type of tide with the highest high tides and lowest low tides	d. tide
_____ **12.** Type of tide that occurs when the Sun, the Moon, and Earth form a right angle	e. tidal range

In the space at the left, write true *if the statement is true; if the statement is false, change the italicized word or phrase to make it true.*

_____ **13.** A current caused by differences in the temperature and salinity of ocean water is called a *gyre*.

_____ **14.** Surface currents are caused by *wind*.

_____ **15.** The gyres of the northern hemisphere circulate in a *counterclockwise* direction.

_____ **16.** An example of a warm, poleward-flowing current is the *Gulf Stream*.

Name _____

Use each of the terms just once to complete the passage.

cold **nutrients** **offshore** **upwelling** **vertically**

In addition to moving horizontally, ocean water moves **(17)** _____. The upward motion of ocean water is called **(18)** _____. Upwelling waters originate from the bottom of the ocean and are **(19)** _____. The trade winds blow surface water **(20)** _____, and the surface water is replaced by upwelling deep water. Upwelling waters are rich in **(21)** _____, which support abundant marine life populations.

Define the following terms:

Plankton=

Benthos=

Nekton=

Aquaculture=

Thermocline Zone=

Desalination=

Ocean Currents=

Surface Currents=

Gyres=

Deep (Density) Currents=

Upwelling=

Name _____

Waves=

Swell=

Crest=

Trough=

Wavelength=

Wave Height=

Breakers=

Longshore Currents=

Refraction=

Undertow=

Rip Currents=

Wave-Cut Cliffs and Platforms=

Sea Arches and Sea Stacks=

Barrier Islands=

Spits=

Bars=

Name _____

Tombolo=

Shoreline Stabilization=

Beach Nourishment=

Tides=

Tidal Range==

Spring Tides==

Neap Tides==

Diurnal==

Semidiurnal=

Flood Tide=

Ebb Tide=

Tidal Bore=