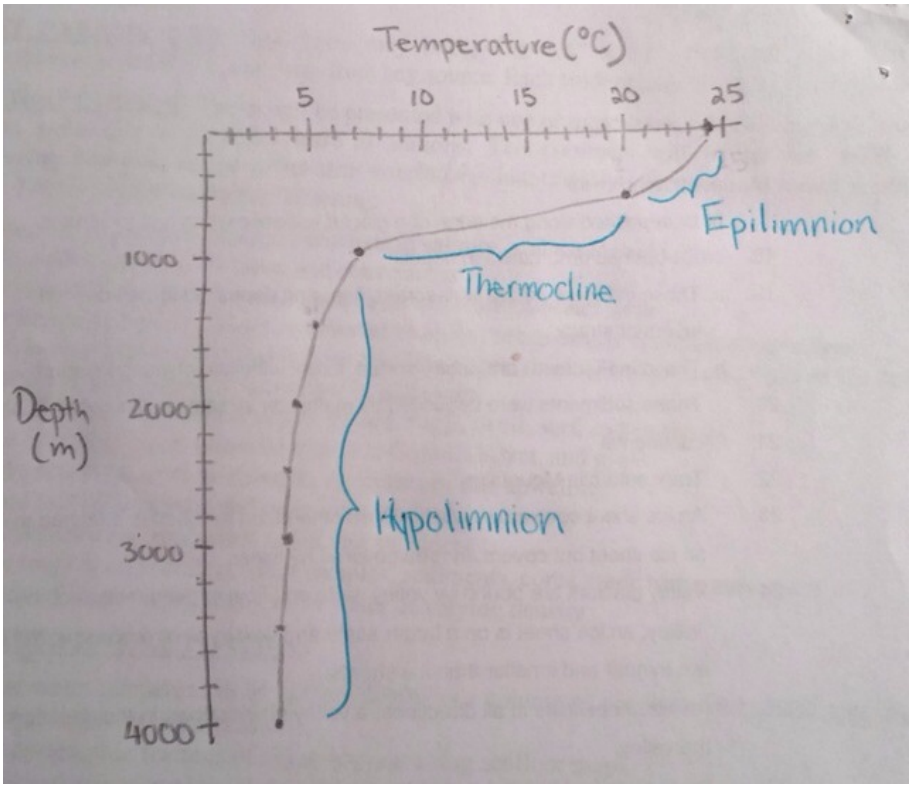
DYNAMIC PLANET: OCEANOGRAPHY

Practice Test 1 Answer Key By CHS

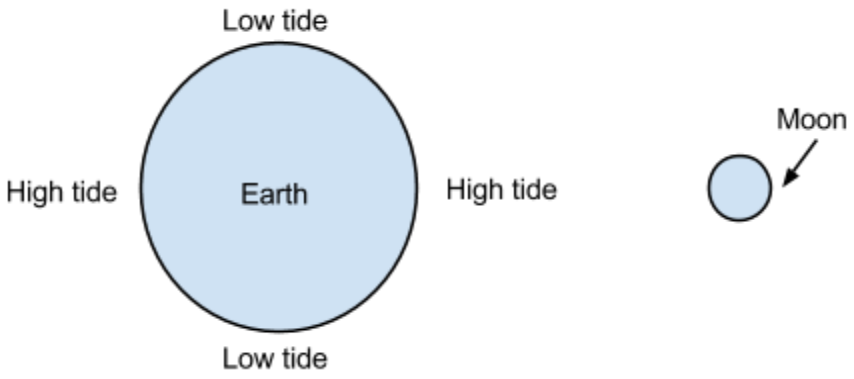
1)



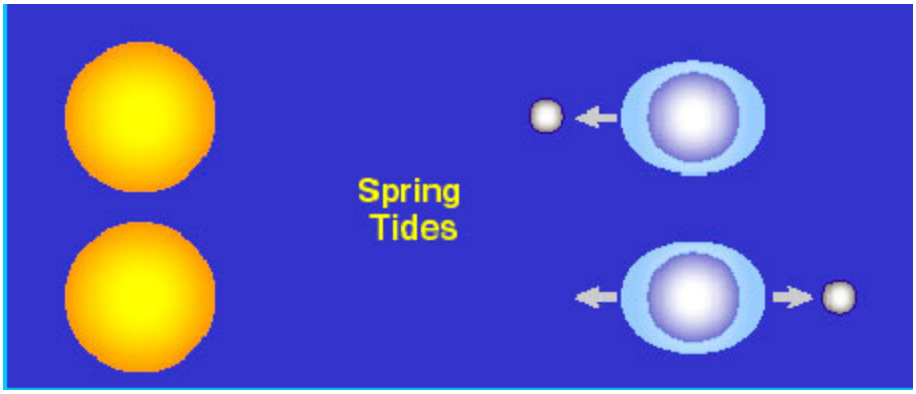
2 points for correct axes and graphing, 1 point each for correct label (5pts)

2) A: continental slope
B: seamounts
C: abyssal plain
D: mid-ocean ridge
E: volcanic island
F: continental shelf
G: trench
1 point each (7pts)

3)



1 point for each tide label (4pts)

4) At an oceanic hotspot or plate boundary
   1 point each (2pts)
5) The Thermohaline Circulation is driven by global density gradients caused by changes in salinity and temperature.
   1 point each for correct use of salinity and temperature (2pts)
6) Multibeam system, sonar echo sounder, side scan sonar
   1 point if any of above answers is written (1pt)
7) a. Semidiurnal - 2 high tides and 2 low tides per day
   c. Diurnal - 1 high & 1 low tide per day
   b. Mixed - 2 high & 2 low tides/day with large inequality in high and low water heights
   3 points for correctly stating the differences between the tides, 1 point each for correct match of tide to diagram (6pts)
8) Analyzing coral growth rings and radiometric dating
   1 point each (2pts)
9) a,b,c,d,e,f
   2 points if all were written, 1 if 3 or more, 0 otherwise (2pts)
10) c (1pt)
11) f (1pt)
12) d (1pt)
13) 

   One point for each correct placement of the Sun, Moon, or Earth (6pts)
14) Marine sediments come from eroded rock particles and oceanic volcanoes, insoluble remains of dead organisms (ex: teeth, bones, shells), chemical reactions between ocean water and seafloor sediments, precipitation of minerals from ocean water, remains of extraterrestrial objects (ex: comets, asteroids)
   3 points if 4 or more of the above are listed, 2 points if 2 or more, 1 point for 1 (3pts)
15) Oldest: red; Youngest: purple; Polarities of the blue and yellow are the same; around mid-ocean ridges
   1 point for each correct answer (4pts)
16) The red regions have a very high salinity (>35.5%). The high salinity of these waters are mostly caused by strong winds and high evaporation rates (evaporation increases with wind speed). As a result, these dense waters will sink and flow toward ocean basins, transporting energy and matter.

1 point for first part, 2 points for second (one each for winds and evaporation rates), 2 points for third (one each for sink and flow) (5pts)

17) Rip current; form where longshore currents or wave backwash collide due to the configuration of the coastal or beach topography
1 point for correct ID, 1 point for correct cause (2pts)

18) The Coriolis Effect (deflection) increases with latitude (increases away from the equator and towards the pole)
2 points for correct answer (2pts)

19) An energy source of hurricanes is the large latent heat of water. Evaporation can take at the tropics because the air is not at 100 percent relative humidity and thus as the water changes from liquid to vapor, the water molecules are now at a higher energy level; the hurricane also draws surface air towards its low-pressure center and the tight pressure gradient nearer the center means that the winds grow stronger as the air approaches the eye. The faster the wind blows, the more evaporation takes place. Increased evaporation means more water vapor in the air and more energy ready to be released in the hurricane's thunderstorms as water vapor condenses.
6 points for mention of both latent heat of water and evaporation due to tight pressure gradient as well as a correct explanation, 2 points for individual mention (6pts)

20) The main driving force behind the theory of plate tectonics is thought to be large scale convection currents in the upper mantle which are transmitted through the asthenosphere.
2 points for correct answer (2pts)

21) a: barrier island
b: tombolo
c: spit
d: beach
e: headland
f: stack
g: stump
1 point each (7pts)

22) Ocean, surface, wind, energy
1 point each (4pts)

23) d, a, e, c, b
1 point each (5pts)

Total: ___/ 80