SMS-204: Integrative marine sciences, physics (D011). Quiz Lab 2.

1. **Pressure differences are used by biological organisms to create flow within them (e.g. tunicate, clams, sponges). What mechanism(s) can cause a pressure change across the organism?**

a. **Opening up a cavity creating a low pressure relative to the environment.**
b. **Accelerating a fluid within the cavity using hairs/cilia and the like.**
c. **Taking advantage of environmental pressure gradients (e.g. from waves).**
d. **All of the above.**

2. **When using a straw we get water to fill our mouth by:**

a. **emptying our mouth of fluids in order to make room for air.**
b. **making the pressure in our mouth less than in the glass.**
c. **making the pressure in our mouth larger than in the glass.**
d. **making the pressure in our mouth the same as in the glass.**

3. **Karo is denser than water. You fill a manometer with two arms with karo. Once the arms filled to mid level, you pour water into one of the arms and let the fluid reach equilibrium. At equilibrium:**

a. **The fluid level in the arm in which you poured water is lowest.**
b. **Not enough information is provided to answer this question.**
c. **The fluid level in the arm in which you poured water is level with the fluid in the other arm.**
d. **The fluid level in the arm in which you poured water is highest.**

4. **In the ocean pressure increases:**

a. **With distance from shore**
b. **With increasing depth**
c. **Both a & b**
d. **No correct answer**

5. **The physical principle on which the Pascal press is based is that:**

a. **the fluid floats one side of the press when the other sinks.**
b. **the fluid is inert and does not interact with material in it.**
c. **the fluid is viscous.**
d. **the fluid transmits the pressure throughout.**

6. To approximate the force that is acting on a balloon by the fluid it is immersed in:

a. Multiply the mean pressure at the depth of the balloon by the balloon's mass.
b. Divide the mean pressure at the depth of the balloon by the balloon's mass.
c. Divide the mean pressure at the depth of the balloon by the balloon's surface area.
d. Multiply the mean pressure at the depth of the balloon by the balloon's surface area.

7. On the moon, pressure on the bottom of a milk carton is:

a. Equal to that on Earth.
b. Larger than on Earth.
c. Smaller than on Earth.
d. Zero.

8. In a horizontal pipe fluid flows from:

a. Low to high pressure.
b. High to low pressure.
c. Viscous to less viscous.
d. high to low gravity.

9. The pressure on the walls of a cup filled with coffee sitting on a table in air is the component of the force that:

a. only acts on the bottom of the cup
b. is parallel to the walls of the cup.
c. is perpendicular to the walls of the cup.
d. is equal at all depths.

10. A diver is underwater and breathes out. She watches the bubbles as they rise. What does she notice about the bubbles?

a. They decrease in volume as they rise due to decreasing pressure.
b. They increase in density as they rise due to decreasing pressure
c. They increase in mass as they rise due to decreasing pressure.
d. They increase in volume as they rise due to decreasing pressure.

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This page was last edited on 1/21/2016