

SMS-204: Integrative marine sciences, physics (D010). Quiz Lab 2.

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

- 2. In the ocean pressure increases:**
 - a. With distance from shore**
 - b. With increasing depth**
 - c. Both a & b**
 - d. No correct answer**

- 3. 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. a & b**
 - d. none of the above**

- 4. On the moon, pressure on the bottom of a milk carton is:**
 - a. Smaller than it would be on Earth.**
 - b. Larger than it would be on Earth.**
 - c. Equal to that it would be on Earth.**
 - d. Zero.**

- 5. 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 the same as in the glass.**
 - d. making the pressure in our mouth larger than in the glass.**

6. A diver is underwater and breathes out. She watches the bubbles as they rise. What does she notice about the bubbles?
- They increase in volume as they rise due to decreasing pressure.
 - They decrease in volume as they rise due to decreasing pressure.
 - They increase in mass as they rise due to decreasing pressure.
 - They increase in density as they rise due to decreasing pressure.
7. 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:
- The fluid level in the arm in which you poured water is warmer.
 - The fluid level in the arm in which you poured water is highest.
 - The fluid level in the arm in which you poured water is level with the fluid in the other arm.
 - The fluid level in the arm in which you poured water is lowest.
8. One physical principle on which the Pascal press is based is that:
- the fluid floats one side of the press when the other sinks.
 - the fluid transmits the pressure throughout its volume.
 - the fluid is inert and does not interact with material in it.
 - the fluid is viscous.
9. To approximate the force that is acting on a balloon by the fluid it is immersed in:
- Multiply the mean pressure at the depth of the balloon by the balloon's mass.
 - Divide the mean pressure at the depth of the balloon by the balloon's surface area.
 - Multiply the mean pressure at the depth of the balloon by the balloon's surface area.
 - Divide the mean pressure at the depth of the balloon by the balloon's mass.
10. In a horizontal pipe fluid flows from:
- Low to high pressure.
 - Viscous to less viscous.
 - High to low pressure.
 - High to low gravity.