

**SMS-303: Integrative marine sciences, physics.**

**Quiz Lab 3.**

**1. Coriolis force:**

- a. is always directed at 90 degrees to the direction of the velocity.
- b. is always directed at the opposite to the direction of the pressure gradient.
- c. is always directed at 90 degrees to the direction of the pressure gradient.
- d. is always directed at opposite direction of the velocity.

**2. Coriolis force on Earth:**

- a. Deflects moving objects to the left in the northern hemisphere.
- b. Deflects moving object to the right in the southern hemisphere.
- c. Deflects moving objects to the right in both hemispheres.
- d. None of the above.

**3. Dye (or any scalar) in a rotating fluid:**

- a. Spread along sheets having constant angular momentum.
- b. Spread the same as in a non rotating fluid.
- c. Spread along sheets having constant temperature.
- d. Does not mix.

**4. Foucault's Pendulum:**

- a. Provide a proof that the Earth is inertial.
- b. Goes up and down with a period that matches the Earth rotation.
- c. Provide a proof that the Earth spins around its own axis.
- d. Provide a proof that the Earth spins around the sun.

**5. When friction acts on geostrophic flows the resulting flow:**

- a. spirals towards the pressure low.
- b. spirals towards the pressure high.
- c. It stops all motion instantaneously.
- d. None of the above.

**6. A Geopotential:**

- a. Is a surface on which a particle is at rest on a rotating planet.**
- b. The surface of a fluid in solid body rotation is a geopotential.**
- c. It's geometry depends on the rotation rate and gravity.**
- d. All of the above.**

**7. If you shoot a missile from the Earth's Equator West it will:**

- a. Curve to the right.**
- b. Fly back.**
- c. Curve to the left.**
- d. Fly straight.**

**8. The surface of a rotating fluid in a tank:**

- a. Is always curved with highest point in center.**
- b. Is curved in a direction that changes with the direction of rotation.**
- c. Is always curved with lowest point in the center.**
- d. None of the above.**

**9. If you shoot a missile from the Earth's Equator south it will:**

- a. Curve to the left.**
- b. Curve to the right.**
- c. Fly straight.**
- d. None of the above.**

**10. Coriolis force:**

- a. Is an invention of the imagination and has nothing to do with motion.**
- b. Is the result of observing motion from within a rotating frame.**
- c. Opposes gravity.**
- d. None of the above.**