SMS-303: Integrative marine sciences, physics (5544).

Quiz Lab 4.

1. **Coriolis force:**

a. **Is an invention of the imagination.**
b. **Is the result of observing motion from withon a rotating frame.**
c. **Opposes gravity.**
d. **None of the above.**

2. **Coriolis force:**

a. **Does no work.**
b. **Works against rotation.**
c. **Works against gravity.**
d. **Does work.**

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

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

4. **Corilois force on Earth:**

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

5. **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.**

6. A Geopotential:

a. Is a surface on which a particle is at rest in a rotating frame of reference.
b. The ocean surface is a geopotential.
c. Depends on the rotation rate and gravity.
d. All of the above.

7. Ekman pumping:

a. Is due to variation in the wind stress (its curl) on the ocean.
b. Is due to the magnitude in the wind stress (its size) on the ocean.
c. Is driven by heating.
d. Is the same as upwelling.

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

a. Is always curved up (highest point in center).
b. Is curved in a direction that changes depending on the rotation direction .
c. Is always curved down (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 right.
b. Fly straight.
c. Curve to the left.
d. None of the above.

10. 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.

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