**SMS-204: Integrative marine sciences, physics.**

**Quiz Lab 5.**

1. **The *Re* number associated with 1m long Tuna swimming at one body-length per second in sea water is:**

a. **Can be computed only if the Tuna is sinking.**
b. **Much less than 1.**
c. **About 1.**
d. **Much larger than 1.**

2. **The drag force on a settling particle at low *Re*:**

a. **Is similar to that of high *Re*.**
b. **is linearly proportional to its velocity.**
c. **is linearly proportional to its velocity^2.**
d. **is linearly proportional to the fluids diffusivity.**

3. **A flagellated bacterium, 2 micrometers in size, stops swimming after swimming 30body length per second. It will then:**

a. **glide ten body lengths before stopping.**
b. **glide about five body lengths before stopping**
c. **glide about one body length before stopping.**
d. **glide much less than one body length before stopping.**

4. **Turbulence:**

a. **Is the property of the fluid.**
b. **Is a property of the flow.**
c. **Is the property of the particle in a fluid.**
d. **All of the above.**

5. **The shape of a sinking particle:**

a. **Does not affect sinking velocity.**
b. **Provide thrust.**
c. **Changes the no-slip condition.**
d. **Affects sinking velocity.**

**6. Reynold's experiment:**

**a. Proved that turbulence exists.**
**b. Showed a new way to mix fluids.**
**c. Proved viscosity exists.**
**d. Showed how turbulence is a threshold phenomenon.**

**7. Size of a marine organism in general:**

**a. correlates with their prey swimming velocity.**
**b. correlates with their predators swimming velocity.**
**c. correlates with their own swimming velocity.**
**d. correlates with their swimming direction.**

**8. When sinking in a stratified fluid:**

**a. As the density of the fluid increases sinking speed increases.**
**b. As the density of the fluid increases sinking speed decreases.**
**c. As the density of the fluid increases sinking speed stays the same.**
**d. As the density of the fluid increases sinking accelerates.**

**9. One of the 'tricks' of low *Re* swimmers is to:**

**a. Break symmetry between stroke and recovery stroke (ciliates)**
**b. Break left right symmetry (corkscrew motion, flagellates).**
**c. Both a and b.**
**d. None of the above.**

**10. Why do we care about *Re*?**

**a. It tells us which swimming strategy is better**
**b. It tells us which swimming strategy is more efficient**
**c. It helps us classify swimmers with similar swimming appendages**
**d. It helps us classify flows of similar characteristics**

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