Name: _____ **Date:** _____

Chef Salt and the Great Aqueous Exchange: 5th Grade Marine Quiz

Analyze thermo-haline circulation and phase change dynamics to predict how salt and heat distribution fuels global weather patterns.

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1. If a large ship drops a load of fresh water icebergs into the high-salinity Mediterranean Sea, what is the most likely result for the local water column?

A. The saltier water will float above the fresh meltwater.
B. The cold meltwater will increase the overall salinity.
C. The fresh meltwater will remain near the surface due to its lower density.
D. The water will stop moving entirely because of the temperature change.

2. When sunlight provides energy for molecules to escape the ocean's surface, the process is called _____, which leaves the remaining ocean water slightly saltier.

A. Sublimation
B. Transpiration
C. Evaporation
D. Precipitation

3. Deep ocean currents are primarily driven by the same wind patterns that create surface waves.

A. True
B. False

4. Imagine a coastal town where the ocean water is unusually warm. How would this most likely affect the local water cycle and weather?

A. Decreased evaporation leading to permanent droughts.
B. Increased evaporation leading to more frequent or intense storms.
C. Higher water density causing the ocean level to drop.
D. Increased condensation that prevents clouds from forming.

5. The _____ Current is a cold-water current that flows along the western coast of South America, significantly cooling the local climate compared to other regions at the same latitude.

A. Humboldt
B. Agulhas
C. Kuroshio
D. Brazil

6. Which scenario would cause the 'Great Ocean Conveyor Belt' to slow down significantly?

A. An increase in global wind speeds.
B. A massive influx of fresh water from melting glaciers in the North Atlantic.
C. The moon moving slightly closer to the Earth.

D. An increase in the total amount of salt in the ocean.

7. The water cycle is a closed system, meaning the total amount of water on Earth stays relatively constant despite changing forms.

A. True
B. False

8. Why does the center of a large continent usually experience drier air than a coastal region at the same latitude?

A. The center of the continent is closer to the sun.
B. Ocean currents cannot reach the center of a continent.
C. Water vapor often precipitates out as rain before it reaches the inland areas.
D. Plants in the center of the continent do not perform transpiration.

9. Even though your drinking water is fresh, the primary source of the water vapor in the atmosphere that created that rain is the _____.

A. Local River
B. Groundwater
C. Ocean
D. Polar Ice Cap

10. Water molecules spend the same amount of time in the atmosphere as they do in the deep ocean before cycling to the next stage.

A. True
B. False