

Advanced Marine Science

Oceanography · Practice Test · 8 Questions

1. Which process is primarily responsible for the formation of deep-ocean basins through the subduction of tectonic plates?

- A) Isostatic rebound
- B) Tectonic convergence
- C) Hydrothermal vent venting
- D) Turbidity current deposition

2. In chemical oceanography, what is the 'compensation depth' defined as in the context of the biological pump?

- A) The depth where net photosynthesis equals zero
- B) The depth where calcium carbonate dissolves completely
- C) The depth where water pressure equals atmospheric pressure
- D) The depth where sunlight penetration ceases entirely

3. Which water mass is characterized by the highest density and is formed primarily in the Weddell Sea?

- A) North Atlantic Deep Water
- B) Antarctic Intermediate Water
- C) Antarctic Bottom Water
- D) Circumpolar Deep Water

4. The Ekman spiral effect, which causes the net transport of water at 90 degrees to the wind direction, occurs in the presence of what force?

- A) Gravitational tidal force
- B) Coriolis effect
- C) Geostrophic pressure gradient
- D) Centrifugal acceleration

5. Which of the following describes the 'Redfield Ratio,' the consistent molar ratio of elements in marine phytoplankton?

- A) 106 C : 16 N : 1 P
- B) 100 C : 10 N : 1 P
- C) 50 C : 5 N : 1 P
- D) 120 C : 20 N : 2 P

6. In the context of coastal oceanography, what phenomenon involves the upward movement of cold, nutrient-rich water to replace surface water pushed away by winds?

- A) Downwelling
- B) Coastal upwelling
- C) Langmuir circulation
- D) Internal wave propagation

7. Which feature of the ocean floor is created by the accumulation of sediment at the base of the continental slope?

- A) Abyssal plain
- B) Continental rise
- C) Mid-ocean ridge
- D) Submarine canyon

8. The speed of sound in seawater is primarily a function of which three variables?

- A) Temperature, salinity, and depth
- B) Density, light penetration, and pH
- C) Wind speed, humidity, and salinity
- D) Chlorinity, surface tension, and turbidity