

Advanced Oceanography Quiz

Oceanography · Answer Key · 20 Questions

1. Which specific process is primarily responsible for the formation of manganese nodules on the abyssal plains?

- A) Hydrothermal precipitation
- B) Biological decomposition
- C) Hydrogenous sedimentation**
- D) Volcanic extrusion

2. What is the primary driver of the thermohaline circulation, often referred to as the 'Global Conveyor Belt'?

- A) Tidal forces from the moon
- B) Density differences caused by temperature and salinity**
- C) Prevailing trade winds
- D) Coriolis effect on surface currents

3. Which zone of the ocean is defined by a rapid change in temperature with depth, typically found below the mixed layer?

- A) Pycnocline
- B) Halocline
- C) Thermocline**
- D) Euphotic zone

4. What is the name of the phenomenon where deep, nutrient-rich water rises to the surface to replace displaced surface water?

- A) Downwelling
- B) Upwelling**
- C) Gyre formation
- D) Tidal bore

5. Which feature of the ocean floor is created at convergent plate boundaries where one tectonic plate subducts beneath another?

- A) Ocean trench**
- B) Mid-ocean ridge
- C) Abyssal hill
- D) Guyot

6. What measurement expresses the total amount of dissolved salts in seawater, typically measured in parts per thousand (ppt)?

- A) Turbidity
- B) Salinity**
- C) Buoyancy
- D) Viscosity

7. Which wind-driven current is responsible for transporting warm water from the Gulf of Mexico toward Western Europe?

- A) California Current
- B) Gulf Stream**
- C) Peru Current
- D) Kuroshio Current

8. What term describes the flat, sediment-covered areas of the deep ocean floor found between the continental rise and mid-ocean ridges?

- A) Continental shelf
- B) Abyssal plain**
- C) Seamount chain
- D) Submarine canyon

9. The Coriolis effect, which influences the path of ocean currents, is a direct result of which planetary movement?

- A) Earth's orbital velocity
- B) Earth's rotation on its axis**
- C) The Moon's gravitational pull
- D) Changes in atmospheric pressure

10. Which type of marine sediment is derived from the remains of microscopic organisms like diatoms and foraminifera?

- A) Lithogenous
- B) Hydrogenous
- C) Biogenous**
- D) Cosmogenous

11. What is the average depth of the world's oceans in meters?

- A) 1,500 meters
- B) 3,700 meters**
- C) 6,200 meters
- D) 10,000 meters

12. Which seafloor feature is an isolated volcanic peak that rises at least 1,000 meters above the surrounding deep-ocean floor?

- A) Guyot
- B) Atoll
- C) Seamount**
- D) Continental rise

13. What causes the formation of a gyre in the open ocean?

- A) The interaction of Earth's rotation, wind patterns, and landmasses**
- B) The sudden release of geothermal energy
- C) Tectonic plate movement at transform faults
- D) Increased evaporation in tropical regions

14. What is the 'benthic zone' of the ocean referring to?

- A) The sunlit upper layer
- B) The entire water column
- C) The ocean floor and the organisms living there**
- D) The interface between the atmosphere and the surface

15. During which moon phase are spring tides, which have the greatest tidal range, most likely to occur?

- A) First and third quarters
- B) New moon and full moon**
- C) Waxing gibbous only
- D) Waning crescent only

16. Which chemical compound is the most abundant dissolved salt in ocean water?

- A) Magnesium sulfate
- B) Calcium carbonate
- C) Sodium chloride**
- D) Potassium bromide

17. What is the primary factor that determines the speed of sound in seawater?

- A) Pressure, temperature, and salinity**
- B) Light intensity and water depth
- C) Presence of phytoplankton
- D) Wind speed above the surface

18. Which region of the ocean is most densely populated with marine life due to high nutrient concentrations and sunlight penetration?

A) Abyssal zone

B) Neritic zone

C) Hadal zone

D) Bathyal zone

19. What is an atoll?

A) A ring-shaped coral reef that encloses a lagoon

B) A flat-topped submarine volcano

C) A deep valley cut into the continental slope

D) A collection of icebergs in the Southern Ocean

20. What does the term 'halocline' specifically refer to in oceanography?

A) A layer where temperature changes rapidly

B) A layer where density is uniform

C) A layer where salinity changes rapidly with depth

D) A layer where light penetration drops to zero