

## Unit 5 – Oceans Twitter Review Questions

U5-1: What agent is most responsible for shoreline changes, such as beach erosion?

- Answer: Waves

U5-2: Identify three (3) forces that affect the movement of surface currents within the ocean.

- Answer: Wind / Land Masses (Continents) / Coriolis Effect

U5-3: What is the relationship between carbon dioxide (CO<sub>2</sub>) concentrations in oceans and global temperatures?

- Answer: As CO<sub>2</sub> concentrations increase, global temperatures increase

U5-4: What is the relative temperature (warm or cold) of surface currents moving from the equator toward the poles?

- Answer: Warm

U5-5: Density currents moving from the poles toward the equator will \_\_\_\_ (rise/sink) as temperatures of the water increase.

- Answer: Rise

U5-6: How many high tides and low tides are experienced in a semidiurnal tidal pattern within one wave period (24 hrs)?

- Answer: 2 High Tides / 2 Low Tides

U5-7: What uniquely distinguishes a semidiurnal tidal pattern from a mixed tidal pattern?

- Answer: Semidiurnal – 2 High Tides / 2 Low Tides of similar heights  
Mixed – 2 High Tides / 2 Low Tides of different heights

U5-8: Describe the alignment/position of the Sun, Earth, and Moon during a spring tide.

- Answer: All three are aligned horizontally in a straight line

U5-9: The force between the Earth and Moon that produces ocean tides is due to \_\_\_\_.

- Answer: Gravity

U5-10: Why does the force of the Moon have a greater impact on tides than the Sun?

- Answer: The Moon is physically closer to Earth than the Sun

U5-11: Which tide system has the smallest daily tidal range and why?

- Answer: Neap Tides – Due to cancelling effect of gravities of perpendicular position of Sun, Earth, and Moon

U5-12: Identify three (3) processes that can increase the salinity of water.

- Answer: Evaporation / Seawater freezes / Decreased global land area

U5-13: The Great Pacific Garbage Patch is a region of the ocean of accumulated trash and is caused by \_\_\_\_\_.

- Answer: Gyres (Surface Currents)

U5-14: Describe the temperature AND salinity content of density currents.

- Answer: Low temperature ; High salinity

U5-15: The exoskeleton of shelled fish can be badly damaged or genetically mutated due to what effect?

- Answer: Ocean Acidification

U5-16: As land area on Earth increases, what will happen to the global sea levels?

- Answer: Increases

U5-17: Identify three (3) ecologically important roles that estuaries and wetlands serve.

- Answer: Act as natural flood zone (control) / Feeding & resting ground for migratory birds / Helps to filter out waterborne pollutants from wildlife areas

U5-18: Identify two (2) benefits of upwelling.

- Answer: Increased nutrient levels and organisms at ocean surface / Changes in water temperature near surface

U5-19: Ocean acidification is closely tied to a high concentration of \_\_\_\_\_ in the oceans.

- Answer: Carbon Dioxide (CO<sub>2</sub>)

U5-20: The Coriolis Effect deflects surface currents \_\_\_\_\_(right/left) in N. Hemisphere and \_\_\_\_\_(right/left) in S. Hemisphere.

- Answer: Right (Clockwise) ; Left (Counterclockwise)

U5-21: What two (2) major factors cause an increase in the density of ocean water?

- Answer: Increased salinity & Decreased temperature

U5-22: What is the source of energy that drives surface currents?

- Answer: Wind & Air Movement

U5-23: A substance with a lower specific heat capacity requires \_\_\_\_\_ energy to change its temperature by 1 °C.

- Answer: Less

U5-24: There is less temperature change over water due to its \_\_\_\_\_(lower/higher) specific heat capacity.

- Answer: Higher

U5-25: Water that rises to the surface as a result of upwelling is typically \_\_\_\_\_(colder/warmer), but \_\_\_\_\_(poor/rich) in nutrients.

- Answer: Colder ; Rich

U5-26: This protective shoreline feature is built of rocks, and in pairs, to prevent movement of sand/waves to allow safe passage of boats.

- Answer: Jetties

U5-27: The Outer Banks of North Carolina is referred to as \_\_\_\_\_.

- Answer: Barrier Islands

U5-28: What percent of Earth's water supply is salt and freshwater, respectively?

- Answer: 97% Saltwater ; 3% Freshwater

U5-29: As ocean depth increases, what happens to light penetration AND temperature, respectively?

- Answer: Decreases ; Decreases

U5-30: Describe the process of upwelling.

- Answer: Rising of cold, deep ocean water to replace warmer surface water

U5-31: Adding more sand/sediments to extend a coastline is a part of what conservation effort?

- Answer: Beach (Re)Nourishment

U5-32: Which layer of the open ocean will photosynthesis most likely occur?

- Answer: At/near the surface

U5-33: What is true of the heating and cooling rate of a substance with a low specific heat capacity?

- Answer: Quick/fast

U5-34: Identify three (3) explanations for the current rise in global sea levels.

- Answer: Melting of glaciers / Rising global temperatures / Thermal expansion of oceans

U5-35: What would happen to deep ocean currents (density currents) if all oceans were same temperature and salinity?

- Answer: Density currents would cease to move at all

U5-36: Although barrier islands are a protective measure for shorelines, identify one (1) disadvantage of barrier islands.

- Answer: Does not provide stable land for residential & commercial development

U5-37: In addition to salinity (salt content), what other factor GREATLY affects the density of seawater?

- Answer: Temperature

U5-38: During a spring tide, which point of Earth will experience the greatest high tides?

- Answer: During Full Moon & New Moon phases at point of ocean that directly faces the Moon

U5-39: NEED TO KNOW: Specific heat capacity of dry sand, wet sand, and water (including what each of the three are to represent).

- Answer: Dry sand (low SHC) ; Wet sand (medium SHC) ; Water (high SHC)

U5-40: Identify negative impacts on shelled fish as a result of ocean acidification.

- Answer: Deformation of exoskeleton shell ; Does not allow shells to calcify to strengthen exoskeleton ; Possible birth defects of baby shelled fishes

U5-41: NEED TO KNOW: Diagram a spring tide AND neap tide (including positions of Sun, Earth, Moon & locations of high tides/low tides).