Name:

Date: Period:

**Lesson 1.1 – Introduction to the Oceans**

**Lesson 1.1: Matching**

*Match each definition with the correct term.*

|  |  |
| --- | --- |
| **Definitions**  \_\_\_\_\_ 1. vertical arrangement of ocean zones by depth  \_\_\_\_\_ 2. ocean zone closest to shore  \_\_\_\_\_ 3. ocean zone farther from shore than the continental shelf  \_\_\_\_\_ 4. ocean zone where there is enough sunlight for photosynthesis  \_\_\_\_\_ 5. part of the ocean basin that lies between continental and oceanic crust  \_\_\_\_\_ 6. ocean zone between the low tide mark and the edge of the continental shelf  \_\_\_\_\_ 7. ocean zone where there is not enough sunlight for photosynthesis | **Terms**  a. continental margin  b. water column  c. aphotic zone  d. oceanic zone  e. neritic zone  f. photic zone  g. littoral zone |

**Lesson 1.1: Critical Reading**

*Read this passage based on the text and answer the questions that follow.*

**Ocean Zones**

To better understand regions of the ocean, scientists define ocean zones based on depth of water or distance from shore.

By depth of water, the entire ocean is divided into two major zones: the photic zone and the aphotic zone.

* The photic zone consists of the top 200 meters of ocean water. This is the depth to which sunlight can penetrate ocean water. Organisms that photosynthesize depend on sunlight for food, so they are restricted to the photic zone. Tiny photosynthetic organisms known as phytoplankton supply nearly all of the energy and nutrients to the rest of the marine food web. Therefore, most other marine organisms live in, or at least visit, the photic zone.
* The aphotic zone includes all ocean water below the top 200 meters. In the aphotic zone, there is not enough sunlight for photosynthesis. The aphotic zone makes up the majority of the ocean. However, it contains a relatively small proportion of its organisms, both in diversity and in numbers.

By distance from shore, the ocean is divided into three major zones: the littoral, neritic, and oceanic zones.

* The littoral, or intertidal, zone is closest to shore. It comprises the region between high and low tide marks. This zone is characterized by constant change, as the tides rise and fall and ocean waves crash on shore. By depth of water, the entire littoral zone is in the photic zone.
* The neritic zone extends from the low tide mark to the edge of the seaward side of the continental shelf. By depth, some of this zone is in the photic zone, and some of it is in the aphotic zone.
* The oceanic zone is the rest of the ocean beyond the continental shelf. The top part of the oceanic zone is in the photic zone, but the vast majority of it is not.

**Questions about the Passage**

1. Compare and contrast the ocean zones that are based on depth.

2. Compare and contrast the ocean zones that are based on distance from shore.

**Lesson 1.1: Multiple Choice**

*Circle the letter of the correct choice.*

1. About what percentage of ocean water mass is made up of salts?
   1. 0.35 percent
   2. 3.5 percent
   3. 35
   4. 55 percent
2. The density of ocean water increases as
   1. salinity increases.
   2. temperature increases.
   3. pressure decreases.
   4. all of the above
3. The average depth of ocean water is about
   1. 380 meters.
   2. 3800 meters.
   3. 38,000 meters.
   4. none of the above
4. Reasons that the deep ocean is a difficult environment for organisms include the
   1. extremely high salinity.
   2. complete absence of light.
   3. constantly changing temperatures.
   4. all of the above
5. Horizontal ocean zones include all of the following except the
   1. neritic zone.
   2. littoral zone.
   3. aphotic zone.
   4. oceanic zone.
6. Why would Earth be a very different planet without its oceans?
   1. Oceans help to keep temperatures fairly constant worldwide.
   2. Oceans are an essential part of the hydrologic cycle.
   3. Oceans contain the majority of Earth’s biomass.
   4. all of the above
7. Most of the salts in ocean water come from
   1. deep-sea vents.
   2. rocks and soil on land.
   3. underwater volcanic eruptions.
   4. decomposition of marine organisms.

**Lesson 1.1: True or False**

*Write true if the statement is true or false if the statement is false. If the statement is false, write the word or phrase that would make the statement true.*

\_\_\_\_\_ 1. About **50 percent** of Earth’s surface is covered with water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 2. **All** of Earth’s oceans are interconnected. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 3. Ocean water heats up and cools down **more quickly** than land. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 4. Earth’s tallest mountain rises from the **Pacific Ocean** floor. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 5. People **have not yet** visited the deepest place in Earth’s oceans. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 6. All phytoplankton in the ocean live in the **aphotic zone**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 7. The **photic zone** makes up the greatest volume of ocean water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 8. The **neritic zone** is the ocean zone that lies above the continental shelf. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 9. Ocean water has **greater** salinity where evaporation is higher. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ 10. Land near an ocean has a **wider** range of temperatures because of the water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lesson 1.1: Fill in the Blank**

*Fill in the blank with the appropriate term.*

1. The total mass of living organisms in a given area is the area’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. The main salt in ocean water is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. The continental \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is divided into the continental shelf, slope, and rise.

4. The salt content of ocean water is referred to as its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. The deepest place in the ocean is named the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. The photic zone of the ocean extends to about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meters below the surface.

7. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone of the ocean is the region between the high and low tide marks.