

Oceanography Section 3-3 Questions

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. According to the theory of global plate tectonics,
- The Earth is gradually getting larger as sea floor spreading continues.
 - Expansion of the sea floor is mainly compensated by the folding of mountains on land.
 - Rate of sea floor subduction equals the rate of sea floor spreading.
 - Lithospheric plates ceased moving millions of years ago.
- _____ 2. The driving force for plate tectonics is
- Seismicity and tectonism.
 - Lithospheric plates dragging across the top of the asthenosphere, causing the asthenosphere to flow.
 - Thermal convection within the asthenosphere.
 - Pounding of waves against the continents.
- _____ 3. Island arcs parallel trenches because
- Magnetic anomalies parallel the ridges.
 - It is an area of compression.
 - Benioff Zones are inclined below the island arcs and earthquakes are deeper.
 - Plates are subducted along the trenches and the molten material they generate rises to form the island arcs.
 - All of the above.
- _____ 4. Volcanism and tectonism are concentrated along plate boundaries because
- These areas tend to be away from the continent and the crust is thinner.
 - Thermal convection is faster there.
 - Rocks are breaking apart and/or sliding past each other.
 - These are the youngest rocks.
- _____ 5. Mantle plumes
- Are part of the Wilson Cycle of ocean basin formation and destruction.
 - Are associated with plate edges at the oceanic ridges.
 - Produce a linear series of volcanoes that parallel the trenches.
 - Produce a linear series of volcanoes in response to plate motion.
 - Are largely responsible for the oceanic ridges.
- _____ 6. In the Wilson Cycle,
- Sea floors can be created at the ridges and simultaneously destroyed in the trenches.
 - Ocean basins are created and later destroyed.
 - Continental mountain chains mark the end of an ocean basin.
 - Oceanic rift valleys are presented except in the declining and terminal stage.
 - All of the above.

Completion

Complete each statement.

7. The frequency, magnitude, and distribution of earthquakes are called _____.

Name: _____

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8. Deformation of the Earth's crust is called _____.
9. The process whereby one part of the sea floor slides below another is called _____. This is most commonly associated with two physiographic features of the ocean: one a deep part of the sea floor called a _____ and the other a chain of emergent volcanoes called the _____. These islands are typically composed of a rock called _____, which is intermediate in composition between granite and basalt.
10. The region of progressively deeper earthquakes where sea floor is subducted is called _____.
11. Rather than speaking in terms of crust in regards to plate tectonics, one should speak of _____ because this is the unit involved in rifting and subduction.
12. "Hot spots" are located above a _____.
13. The history of ocean basins from formation to destruction is called the _____.
14. The five stages in ocean basin history in order are _____, _____, _____, _____, and _____.
15. The name applied to the fault complex in southern California, which is gradually pulling this area away from North America, is _____. It is a _____ fault and separates two segments of an oceanic ridge. In some areas along the fault _____ forces have raised mountains, but in others _____ has created depressions.