

Oceanography Sections 2-1 & 2-2 Questions

Multiple Choice

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

- _____ 1. Which of the following best describes Earth's crust?
- Outermost layer rich in silicon, aluminum, and oxygen and mainly consists of granite and basalt
 - Outer part of the lithosphere and above the moho
 - Least dense part of the Earth upon which the hydrosphere and atmosphere sit
 - All of the above
- _____ 2. Which of the following best describes the mantle?
- Extends from the base of the lithosphere to the core, at about 2900 km
 - Can be subdivided into three parts: outer rigid mantle (lower part of the lithosphere), the asthenosphere, and the mesosphere
 - Is separated from the core by the moho
 - All of the above
- _____ 3. Which of the following best describes the core?
- Innermost part of the Earth and enriched in iron, magnesium, and aluminum
 - More dense than the mantle and liquid throughout
 - Divided into liquid outer core and solid inner core, both alloys of iron and nickel
 - Densest part of the Earth and composed of solid outer core and liquid inner core
- _____ 4. Which of the following always favors melting?
- Increasing pressure and decreasing temperature
 - Increasing pressure and increasing temperature
 - Decreasing pressure and decreasing temperature
 - Decreasing pressure and increasing temperature
- _____ 5. Which of the following sets of Earth layers are at least partially liquid?
- Crust, mantle, and core
 - Lithosphere, mantle, and inner core
 - Asthenosphere, outer core, and hydrosphere
 - Asthenosphere, mesosphere, and outer core
- _____ 6. Which of the following best describes the continental margin province?
- Flooded edge of the continent that extends from the shelf break to the deep sea floor
 - Submerged thick wedge of sediments eroded from the land and consisting of the continental shelf, continental slope, and continental rise
 - Flooded edge of the continent that extends from the shoreline to a depth of above 10 km and crossed by transform faults
 - Mainly volcanic in origin, crossed by submarine canyons and rift valleys
- _____ 7. Which best describes the difference between the continental shelf, slope, and rise?
- The mainly differ in slope and depth
 - The shelf is mainly sedimentary, but the slope and rise are volcanic
 - The shelf and the rise are flat, and the slope is steeply inclined
 - The shelf is mainly granite, and the slope and rise are sediments

- _____ 8. Which best describes the deep ocean province?
- The flattest place on Earth where sediments have buried all sea floor irregularities
 - Featureless plain between the continental margin and midoceanic provinces
 - Area crossed by submarine canyons
 - Highly variable region containing flat plains, trenches, hills, and seamounts
- _____ 9. Which best describes the midoceanic ridge province?
- Broad submerged mountain chain, offset along its length by transform faults and divided at its crest by a rift valley
 - Mountainous region that subdivides all ocean floors into two halves
 - Submerged mountainous region, offset along its length by rift valleys and divided at its crest by fracture zones and transform faults
 - Broad submerged mountainous region composed mainly of granite and not always located in the center of the ocean basin
- _____ 10. Fracture zones are best described as
- Faults that extend along the midoceanic ridge crests
 - Faults that cut across and offset the midoceanic ridge along its length
 - Inactive parts of transform faults that extend into the deep ocean province.
 - The cause of the submarine canyons on the continental slope and rise

Completion

Complete each statement.

11. From the exterior inward, the three rock compositional divisions of the solid Earth are _____, _____, and _____.
12. The two factors controlling whether a material is solid or liquid are _____ and _____.
13. From the exterior inward, the five layers based on physical state of the interior of the Earth are _____, _____, _____, _____, and _____.
14. The three exterior spheres of the Earth are _____, _____, and _____.
15. From the exterior inward, the mantle can be divided into the _____, _____, and _____ listed.
16. The lithosphere is composed of two parts: _____ and _____.
17. The sea floor can be subdivided into the following three provinces: _____, _____, and _____.
18. Seaward from the shore extends a broad nearly flat part of the sea floor called the _____. It continues to the shelf break at a depth of about _____. This is the top of the massive sedimentary wedge that surrounds the continent. Beyond the shelf break, the bottom begins to incline more steeply at the slope of about 4° , forming an area called _____. Locally, deep steep-sided valleys, called _____, cut across this area and widen seaward. The base of this inclined area merges imperceptibly with a vast sedimentary plain called _____, which has a slight slope of about 1° seaward into water about 4 km deep.

Name: _____

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19. On the ocean floor there extends a broad, featureless, virtually flat area called the _____. The origin bathymetry here was very irregular, but massive accumulations of _____ from the land have buried all the irregularities. Seaward, the seascape becomes more irregular as tops of volcanoes extend through, creating low domes and high submerged mountains called _____. Some of these mountains, called _____, are flat-topped from having been eroded by _____ at a time when they emerged. In some areas the sea floor slopes steeply downward into a _____, the deepest part of the ocean floor.
20. Occasionally in the center of the ocean, but more commonly not centered, the midoceanic ridge is divided at the top by a deep depression along its axis called a _____, which is bounded on each side by faults. The axis of the ridge is frequently offset along its length by _____. Inactive parts of these can be traced onto the ocean floor where they are called _____.

Matching

Match the term with the most appropriate phrase.

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| a. Mass/volume (g/cm ³) | g. Physical state when temperature exceeds melting point |
| b. Outermost shell of the solid Earth | h. Combined crust and outer rigid mantle |
| c. Gaseous layer surrounding the solid Earth | i. Consists of lower lithosphere, asthenosphere, and mesosphere |
| d. All the free water on the Earth | j. Partially melted mantle |
| e. Solid mantle directly above the core | k. Solid layer of iron and nickel alloys |
| f. Liquid layer composed of iron and nickel alloys | l. State when pressure raises melting point above existing temperature |

- _____ 21. Asthenosphere
- _____ 22. Atmosphere
- _____ 23. Crust
- _____ 24. Density
- _____ 25. Hydrosphere
- _____ 26. Inner Core
- _____ 27. Liquid
- _____ 28. Lithosphere
- _____ 29. Mantle
- _____ 30. Mesosphere
- _____ 31. Outer Core
- _____ 32. Solid