

Volcanoes Short Study Guide

Multiple Choice

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

- _____ 1. All of the following affect the temperature at which magma forms EXCEPT _____.
- a. pressure
 - b. composition of source material
 - c. water
 - d. viscosity
- _____ 2. Which of the following are used to classify plutons?
- a. uplift, erosion, weathering, and deposition
 - b. amount of silica and dissolved gases
 - c. size, shape, and relationship to surrounding rocks
 - d. viscosity, amount of silica, and dissolved gases
- _____ 3. Most volcanoes occur _____.
- a. along convergent boundaries
 - b. far from tectonic plate boundaries
 - c. along divergent boundaries
 - d. randomly
- _____ 4. Types of plutons include _____.
- a. shields, cinder-cones, and composites
 - b. vents, craters, and calderas
 - c. dust, ash, lapilli, volcanic blocks, and volcanic bombs
 - d. batholiths, stocks, sills, dikes, and laccoliths
- _____ 5. Which of the following are landscape features associated with volcanoes?
- a. uplift, erosion, weathering, and deposition
 - b. hot spots and flood basalts
 - c. vents, craters, and calderas
 - d. batholiths, stocks, sills, dikes, and laccoliths
- _____ 6. Volcanism that occurs under water along mid-ocean ridges is _____.
- a. the Mediterranean Belt
 - b. the Ring of Fire
 - c. a hot spot
 - d. rift volcanism

Completion

Complete each sentence or statement.

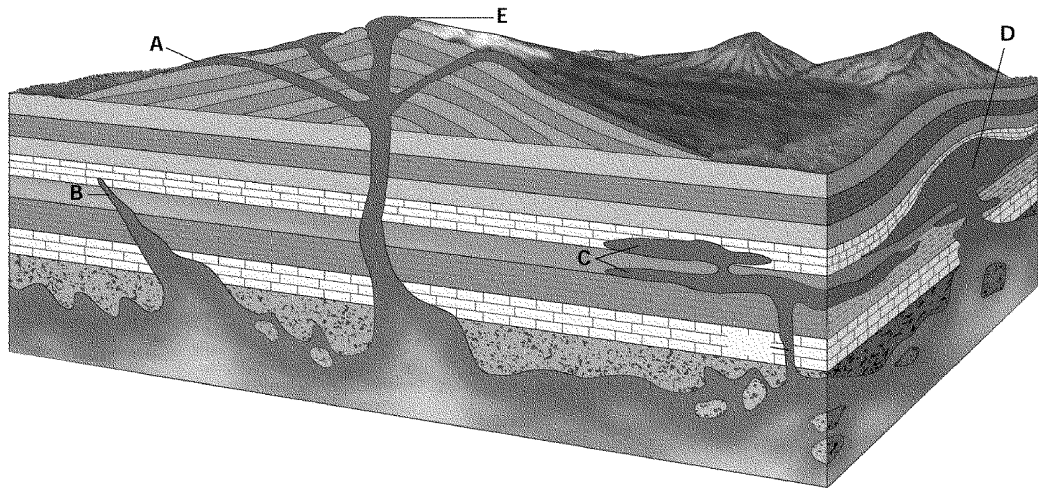
Complete the table below.

Magma Characteristics			
Type of Magma	Source Material	Viscosity	Gas Content
Basaltic magma	1.	2.	1-2%
Andesitic magma	3.	4.	3-4%
5.	Continental crust	6.	4-6%

7. Number 1 in table above is _____.
8. Number 2 in the table above is _____.
9. Number 3 in the table above is _____.
10. Number 4 in the table above is _____.
11. Number 5 in the table above is _____.
12. Number 6 in the table above is _____.

Matching

Match each letter that appears on the diagram with the correct feature below.



- ___ 13. Laccolith
- ___ 14. Dike
- ___ 15. Lava flow

- ___ 16. Sill
 ___ 17. Volcano

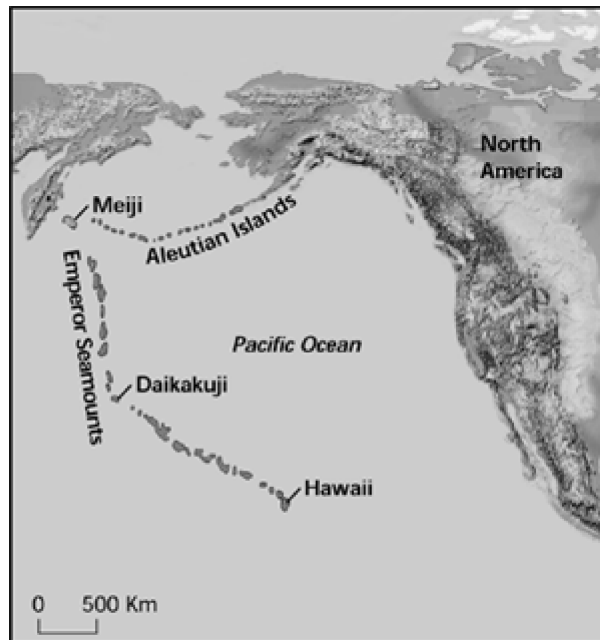
Match each item with the correct definition below.

- | | |
|--------------|-----------|
| a. caldera | d. pluton |
| b. vent | e. tephra |
| c. viscosity | f. crater |

- ___ 18. Volcanic fragments thrown into air during a volcanic eruption
 ___ 19. Internal resistance to flow
 ___ 20. Opening in Earth's crust through which lava erupts
 ___ 21. Bowl-shaped depression around a vent at the top of a volcano
 ___ 22. Depression that forms when the top or side of a volcano collapses into the magma chamber

Short Answer

23. In the map below, what does the bend in the Hawaiian-Emperor volcanic chain at Daikakuji Seamount indicate?



Compare and contrast each pair of related terms or phrases.

24. sill, dike
 25. Describe the composition and characteristics of andesitic magma.
 26. The volcano Izalco in El Salvador is a small, steep-sided volcano. What conclusions can be drawn about the characteristics of the lava that formed this volcano?

Name: _____

ID: A

A substance's viscosity is a measure of its internal resistance to flow. Viscosity is a property of lava. When lava is heated or cooled, its viscosity changes. Think about what type of demonstration could be designed to show the effect of temperature on the viscosity of lava. Then answer the following questions.

27. Propose a hypothesis that describes the relationship between temperature and viscosity.
28. What substances could be used to demonstrate the effects of temperature on the viscosity of lava?
29. How would you manipulate the temperature of the substance?
30. What factors must remain the same?

Volcanoes Short Study Guide Answer Section

MULTIPLE CHOICE

1. D
2. C
3. A
4. D
5. C
6. D

COMPLETION

7. upper mantle
8. low
9. oceanic crust and sediments
10. intermediate
11. rhyolitic magma
12. high

MATCHING

13. D
14. B
15. A
16. C
17. E

18. E
19. C
20. B
21. F
22. A

SHORT ANSWER

23. The bend indicates that the direction of the Pacific Plate changed in the past.
24. Both sills and dikes are plutons. A sill forms when magma intrudes and is parallel to older layers of rocks. A dike forms when magma invades cracks and cuts across older layers of rock.
25. Andesitic magma is one of the three major types of magma. It forms along continental margins from oceanic crust or oceanic sediments. Andesitic magma has an intermediate silica content, viscosity, and gas content.

26. Small volcanoes with steep sides are cinder-cone volcanoes that form from highly viscous lava, which has a high silica, high water, and high gas content.
27. Students' answers will vary, but could state that an increase in temperature will result in a decrease in viscosity or that a decrease in temperature will result in an increase in viscosity, among others.
28. Suitable choices include thick liquids such as syrup, honey, molasses, or motor oil.
29. either by cooling it, or warming it, or both
30. the amount and type of substance tested, the angle of the inclined surface, and the distance that the substance will be allowed to flow