

Student: _____

1. Mafic magmas
 - A. May contain up to about 75 percent SiO_2 by weight.
 - B. Are viscous and do not flow easily.
 - C. Tend to inhibit passage of gas that tries to escape through it.
 - D. Result in less violent eruptions than felsic to intermediate magmas.
2. The Pacific Ring of Fire is
 - A. A nearly circular region of fissure eruptions in the Pacific Ocean basin.
 - B. Volcanic activity related to subduction zones and spreading zones rimming the Pacific Ocean basin.
 - C. A region of nearly continuous eruption of nueé ardentes in the Pacific Ocean basin.
 - D. The region defined by the Hawaiian Islands and the adjacent underwater volcanoes known as seamounts.
 - E. A doughnut-shaped eruption characteristic of Pacific Islands, which, when dormant is called an atoll.
3. Volcanic rocks are
 - A. Crystallized from magma at or near the earth's surface.
 - B. By definition, only those produced by conelike volcanic structures.
 - C. Coarse-grained because the magmas typically spend so long inside the volcano before eruption.
 - D. All of the choices are correct.
4. Eruption of magma from a long crack in the lithosphere is a
 - A. Pyroclastic eruption.
 - B. Nuée ardente.
 - C. Fissure eruption.
 - D. Cascade volcano.
5. The rock type that forms at new seafloor spreading centers is
 - A. Andesitic.
 - B. Rhyolitic.
 - C. Granitic.
 - D. Basaltic.
6. A volcano built of many thin flows of fluid lava is a
 - A. Shield volcano.
 - B. Composite volcano.
 - C. Cinder cone.
 - D. Subduction-zone volcano.
7. Which of the following is a good example of a shield volcano
 - A. Mt. St. Helens.
 - B. Andes mountains.
 - C. Cascade mountains.
 - D. Hawaiian islands.
8. Rather than freely spreading, if the lava piles up close to the vent resulting in a structure that is steep-sided and compact is called a
 - A. Volcanic dome.
 - B. Plutonic dome.
 - C. Volcanic basin.
 - D. Lava dome.

9. The low-viscosity, fluid lava of hot-spot volcanoes is typically
 - A. Felsic.
 - B. Intermediate.
 - C. Mafic.
 - D. Ultramafic.
10. In contrast to the mafic volcanism at rift zones, subduction zone lavas are lower in iron content but significantly higher in these
 - A. Magnesium and silica.
 - B. Water and silica.
 - C. Water and magnesium.
 - D. Calcium and silica.
11. A volcanic landform built of entirely of pyroclastics of basaltic composition is a
 - A. Shield volcano.
 - B. Cinder cone.
 - C. Volcanic dome.
 - D. Nuée ardente.
12. Pyroclastics
 - A. Represent the fluid portion of lavas.
 - B. Are solid materials erupted from a volcano.
 - C. Are smaller volcanos that develop on the sides of a main volcano.
 - D. Are researchers who study volcanos and volcanic processes.
13. Fast moving volcanic mudflow is formed as a result of the combination of water and volcanic ash results in
 - A. Lahars.
 - B. Pyroclastic flows.
 - C. Cinder cones.
 - D. Lava domes.
14. Strategies for stopping an advancing lava flow include all of the following except
 - A. Spraying water on the flow front to cool it.
 - B. Constructing a dense, massive plug to stop up the vent from which the magma is erupting.
 - C. Using explosives to punch holes selectively in a flow's hardened crust to divert remaining liquid lava.
 - D. All of these are strategies for stopping an advancing lava flow.
15. Volcanic ash
 - A. Is composed of microscopic shards of volcanic glass.
 - B. Is soot formed when hot lava causes plants to burn.
 - C. Is the same size as cinder.
 - D. Is only erupted by rift zone volcanoes.
16. The 1883 Krakatoa, Indonesia eruption is more accurately classified as an
 - A. Effusive eruption.
 - B. Pyroclastic eruption.
 - C. Phreatic eruption.
 - D. None of the choices are correct.
17. A hot, glowing cloud of gas and ash is sometimes known as a
 - A. Nuée ardente.
 - B. Lahar.
 - C. Rhyolite.
 - D. Composite flow.

18. A significant portion of what is erupted by a volcano is gas. Water vapor represents the largest percentage of the total volume of gas erupted. This gas represents the second largest percentage of the total gas volume
- Sulfur dioxide.
 - Nitrogen dioxide.
 - Carbon dioxide.
 - Carbon monoxide.
19. A phreatic volcanic eruption
- Involves ash only.
 - Is the same type of eruption as a nuée ardente.
 - Only occurs at rift zones.
 - Results from groundwater that becomes steam upon magmatic heating.
20. Which of the following volcanoes is least likely to erupt violently and explosively?
- Kilauea on Hawaii
 - Mount St. Helens in the Cascades
 - Mount Augustine in the Aleutians
 - Mt. Pinatubo in the Philippines
21. The type of volcano most likely to form over an oceanic "hot spot" is a
- Composite volcano.
 - Volcanic dome.
 - Shield volcano.
 - Stratovolcano.
22. The 1991 eruption of Mt. Pinatubo caused global cooling because it
- Added ozone to the ozone layer.
 - Produced sulfuric acid droplets in the atmosphere that blocked incoming sunlight.
 - Caused increased evaporation of cool water vapor from the oceans.
 - Produced very strong winds that cooled the continents.
23. Possible precursors of volcanic eruptions include.
- Bulging, tilt or uplift of the volcano's surface.
 - Increased seismic activity.
 - Changes in composition of gases escaping from the volcano.
 - All of the choices are correct.
24. Active periods in a volcano's history
- Typically involve only one significant eruptive phase lasting days or, at most, a few weeks.
 - Always begin with a nuée ardente.
 - May occur at intervals of hundreds or thousands of years, with quiet periods in between.
 - All of the choices are correct.
25. Of the following volcanic landforms, one that is a stratovolcano
- Any one of the Azores Islands, Portugal.
 - Mt. Hood, Oregon.
 - Any one of the Hawaiian Islands.
 - Sunset Crater, Arizona.
26. The Soufriere Hills volcano on Montserrat in the Caribbean
- Is a good example of a shield volcano.
 - Is a good example of a stratovolcano.
 - Is formed by a rift zone.
 - Is an unusually large cinder cone.

27. A volcanic rock of intermediate composition, characteristic of subduction-zone volcanoes like those of the Cascade Range is
- A. Basalt.
 - B. Andesite.
 - C. Rhyolite.
 - D. Granite.
28. The Volcanic Explosivity Index (VEI) is based on
- A. The length of the eruption.
 - B. The volume of pyroclastics produced.
 - C. The height to which the pyroclastics rose in the atmosphere.
 - D. All the choices are correct.
29. The Cascade Range volcanoes
- A. Sit above a subduction zone.
 - B. Are now expected to become extinct as they cool.
 - C. Pose little threat, as their eruptions are typically quiet ones.
 - D. All of the choices are correct.
30. A caldera is
- A. A topographically low area that results from the collapse of a volcano after its magma chamber empties or removal of the top of a volcano during an explosive eruption.
 - B. An alternate name for boiling mud pots in thermally active areas.
 - C. Not associated with andesitic or rhyolitic volcanism, but only with basaltic volcanism.
 - D. Only preserved for short periods of time, so that ancient calderas do not exist.
31. Mount St. Helens and the related Cascade Range volcanoes represent the only volcanically active areas in the United States.
True False
32. Yellowstone National Park is underlain by an ancient volcanic caldera and current thermal activity and uplift there may signal future eruption potential.
True False
33. Volumetrically, the greatest production of new volcanic rock occurs at seafloor spreading ridges.
True False
34. The so-called Ring of Fire rimming the Pacific Ocean is really a ring of subduction zones.
True False
35. Volcanoes that build domes are more likely to erupt explosively than are shield volcanoes.
True False
36. A dormant volcano that is currently inactive could have a potential to possibly become active.
True False
37. The largest and most violent Cascade volcano eruption was that of Mt. St. Helens in 1980.
True False
38. The path of a lava flow can to some extent be predicted; like any fluid, lava flows downhill.
True False
39. To halt a pyroclastic flow, one could use many of the same techniques as are used for lava, because both are flowing fluids.
True False
40. Each volcano has a characteristic eruptive style; the nature of past eruptions indicates whether or not a particular volcano is likely to erupt violently in the future.
True False

41. People can be killed by poisonous gases emitted by a volcano even before they realize that they are in danger.
True False
42. The damage from ash fall in the eruption of Mt. Pinatubo, Philippines in 1991 would have been worse, but fortunately, monsoon rains washed the ash off houses and hillsides.
True False
43. Of the following: various sulfur gases, hydrochloric acid, and carbon monoxide, only carbon monoxide is poisonous.
True False
44. The passage of magma up through the lithosphere may be traced by the shallow earthquake focal depths over time.
True False
45. Construction on any active or dormant volcano in the United States is now prohibited by law because it would be so dangerous.
True False
46. A major concern about possible future eruptions of Mount Rainier is the potential for mudflow damage to nearby cities.
True False
47. So far, Mount St. Helens is the only volcano in the Cascade Range to show any sign of thermal activity.
True False
48. Increased thermal activity (fumaroles, hot springs) in a volcanic area may signal the presence of hot magma at shallow depths in the crust.
True False
49. Volcanic ash from recent eruptions of Aleutian volcanoes has posed a threat to air travel.
True False
50. Explosive volcanoes can be so unpredictable that even volcanologists monitoring and studying them can be killed by unexpected eruptions.
True False
51. The Yellowstone Park volcanic area is along a hot-spot track across the northwestern United States.
True False

5 Key

1. Mafic magmas
- A. May contain up to about 75 percent SiO₂ by weight.
 - B. Are viscous and do not flow easily.
 - C. Tend to inhibit passage of gas that tries to escape through it.
 - D.** Result in less violent eruptions than felsic to intermediate magmas.

Montgomery - Chapter 05 #1

2. The Pacific Ring of Fire is
- A. A nearly circular region of fissure eruptions in the Pacific Ocean basin.
 - B.** Volcanic activity related to subduction zones and spreading zones rimming the Pacific Ocean basin.
 - C. A region of nearly continuous eruption of nueé ardentes in the Pacific Ocean basin.
 - D. The region defined by the Hawaiian Islands and the adjacent underwater volcanoes known as seamounts.
 - E. A doughnut-shaped eruption characteristic of Pacific Islands, which, when dormant is called an atoll.

Montgomery - Chapter 05 #2

3. Volcanic rocks are
- A.** Crystallized from magma at or near the earth's surface.
 - B. By definition, only those produced by conelike volcanic structures.
 - C. Coarse-grained because the magmas typically spend so long inside the volcano before eruption.
 - D. All of the choices are correct.

Montgomery - Chapter 05 #3

4. Eruption of magma from a long crack in the lithosphere is a
- A. Pyroclastic eruption.
 - B. Nuée ardente.
 - C.** Fissure eruption.
 - D. Cascade volcano.

Montgomery - Chapter 05 #4

5. The rock type that forms at new seafloor spreading centers is
- A. Andesitic.
 - B. Rhyolitic.
 - C. Granitic.
 - D.** Basaltic.

Montgomery - Chapter 05 #5

6. A volcano built of many thin flows of fluid lava is a
- A.** Shield volcano.
 - B. Composite volcano.
 - C. Cinder cone.
 - D. Subduction-zone volcano.

Montgomery - Chapter 05 #6

7. Which of the following is a good example of a shield volcano
- A. Mt. St. Helens.
 - B. Andes mountains.
 - C. Cascade mountains.
 - D.** Hawaiian islands.

Montgomery - Chapter 05 #7

8. Rather than freely spreading, if the lava piles up close to the vent resulting in a structure that is steep-sided and compact is called a
- A. Volcanic dome.
 - B. Plutonic dome.
 - C. Volcanic basin.
 - D. Lava dome.**

Montgomery - Chapter 05 #8

9. The low-viscosity, fluid lava of hot-spot volcanoes is typically
- A. Felsic.
 - B. Intermediate.
 - C. Mafic.**
 - D. Ultramafic.

Montgomery - Chapter 05 #9

10. In contrast to the mafic volcanism at rift zones, subduction zone lavas are lower in iron content but significantly higher in these
- A. Magnesium and silica.
 - B. Water and silica.**
 - C. Water and magnesium.
 - D. Calcium and silica.

Montgomery - Chapter 05 #10

11. A volcanic landform built of entirely of pyroclastics of basaltic composition is a
- A. Shield volcano.
 - B. Cinder cone.**
 - C. Volcanic dome.
 - D. Nuée ardente.

Montgomery - Chapter 05 #11

12. Pyroclastics
- A. Represent the fluid portion of lavas.
 - B. Are solid materials erupted from a volcano.**
 - C. Are smaller volcanos that develop on the sides of a main volcano.
 - D. Are researchers who study volcanos and volcanic processes.

Montgomery - Chapter 05 #12

13. Fast moving volcanic mudflow is formed as a result of the combination of water and volcanic ash results in
- A. Lahars.**
 - B. Pyroclastic flows.
 - C. Cinder cones.
 - D. Lava domes.

Montgomery - Chapter 05 #13

14. Strategies for stopping an advancing lava flow include all of the following except
- A. Spraying water on the flow front to cool it.
 - B. Constructing a dense, massive plug to stop up the vent from which the magma is erupting.**
 - C. Using explosives to punch holes selectively in a flow's hardened crust to divert remaining liquid lava.
 - D. All of these are strategies for stopping an advancing lava flow.

Montgomery - Chapter 05 #14

15. Volcanic ash
- A. Is composed of microscopic shards of volcanic glass.**
 - B. Is soot formed when hot lava causes plants to burn.
 - C. Is the same size as cinder.
 - D. Is only erupted by rift zone volcanoes.

Montgomery - Chapter 05 #15

16. The 1883 Krakatoa, Indonesia eruption is more accurately classified as an
- A. Effusive eruption.
 - B. Pyroclastic eruption.
 - C.** Phreatic eruption.
 - D. None of the choices are correct.

Montgomery - Chapter 05 #16

17. A hot, glowing cloud of gas and ash is sometimes known as a
- A.** Nuée ardente.
 - B. Lahar.
 - C. Rhyolite.
 - D. Composite flow.

Montgomery - Chapter 05 #17

18. A significant portion of what is erupted by a volcano is gas. Water vapor represents the largest percentage of the total volume of gas erupted. This gas represents the second largest percentage of the total gas volume
- A. Sulfur dioxide.
 - B. Nitrogen dioxide.
 - C.** Carbon dioxide.
 - D. Carbon monoxide.

Montgomery - Chapter 05 #18

19. A phreatic volcanic eruption
- A. Involves ash only.
 - B. Is the same type of eruption as a nuée ardente.
 - C. Only occurs at rift zones.
 - D.** Results from groundwater that becomes steam upon magmatic heating.

Montgomery - Chapter 05 #19

20. Which of the following volcanoes is least likely to erupt violently and explosively?
- A.** Kilauea on Hawaii
 - B. Mount St. Helens in the Cascades
 - C. Mount Augustine in the Aleutians
 - D. Mt. Pinatubo in the Philippines

Montgomery - Chapter 05 #20

21. The type of volcano most likely to form over an oceanic "hot spot" is a
- A. Composite volcano.
 - B. Volcanic dome.
 - C.** Shield volcano.
 - D. Stratovolcano.

Montgomery - Chapter 05 #21

22. The 1991 eruption of Mt. Pinatubo caused global cooling because it
- A. Added ozone to the ozone layer.
 - B.** Produced sulfuric acid droplets in the atmosphere that blocked incoming sunlight.
 - C. Caused increased evaporation of cool water vapor from the oceans.
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Montgomery - Chapter 05 #22

23. Possible precursors of volcanic eruptions include.
- A. Bulging, tilt or uplift of the volcano's surface.
 - B. Increased seismic activity.
 - C. Changes in composition of gases escaping from the volcano.
 - D.** All of the choices are correct.

Montgomery - Chapter 05 #23

24. Active periods in a volcano's history
A. Typically involve only one significant eruptive phase lasting days or, at most, a few weeks.
B. Always begin with a nuée ardente.
C. May occur at intervals of hundreds or thousands of years, with quiet periods in between.
D. All of the choices are correct.

Montgomery - Chapter 05 #24

25. Of the following volcanic landforms, one that is a stratovolcano
A. Any one of the Azores Islands, Portugal.
B. Mt. Hood, Oregon.
C. Any one of the Hawaiian Islands.
D. Sunset Crater, Arizona.

Montgomery - Chapter 05 #25

26. The Soufriere Hills volcano on Montserrat in the Caribbean
A. Is a good example of a shield volcano.
B. Is a good example of a stratovolcano.
C. Is formed by a rift zone.
D. Is an unusually large cinder cone.

Montgomery - Chapter 05 #26

27. A volcanic rock of intermediate composition, characteristic of subduction-zone volcanoes like those of the Cascade Range is
A. Basalt.
B. Andesite.
C. Rhyolite.
D. Granite.

Montgomery - Chapter 05 #27

28. The Volcanic Explosivity Index (VEI) is based on
A. The length of the eruption.
B. The volume of pyroclastics produced.
C. The height to which the pyroclastics rose in the atmosphere.
D. All the choices are correct.

Montgomery - Chapter 05 #28

29. The Cascade Range volcanoes
A. Sit above a subduction zone.
B. Are now expected to become extinct as they cool.
C. Pose little threat, as their eruptions are typically quiet ones.
D. All of the choices are correct.

Montgomery - Chapter 05 #29

30. A caldera is
A A topographically low area that results from the collapse of a volcano after its magma chamber empties or removal of the top of a volcano during an explosive eruption.
B. An alternate name for boiling mud pots in thermally active areas.
C. Not associated with andesitic or rhyolitic volcanism, but only with basaltic volcanism.
D. Only preserved for short periods of time, so that ancient calderas do not exist.

Montgomery - Chapter 05 #30

31. Mount St. Helens and the related Cascade Range volcanoes represent the only volcanically active areas in the United States.
FALSE

Montgomery - Chapter 05 #31

32. Yellowstone National Park is underlain by an ancient volcanic caldera and current thermal activity and uplift there may signal future eruption potential.
TRUE

Montgomery - Chapter 05 #32

33. Volumetrically, the greatest production of new volcanic rock occurs at seafloor spreading ridges.
TRUE
34. The so-called Ring of Fire rimming the Pacific Ocean is really a ring of subduction zones.
Montgomery - Chapter 05 #33
TRUE
35. Volcanoes that build domes are more likely to erupt explosively than are shield volcanoes.
Montgomery - Chapter 05 #34
TRUE
36. A dormant volcano that is currently inactive could have a potential to possibly become active.
Montgomery - Chapter 05 #35
TRUE
37. The largest and most violent Cascade volcano eruption was that of Mt. St. Helens in 1980.
Montgomery - Chapter 05 #36
FALSE
38. The path of a lava flow can to some extent be predicted; like any fluid, lava flows downhill.
Montgomery - Chapter 05 #37
TRUE
39. To halt a pyroclastic flow, one could use many of the same techniques as are used for lava, because both are flowing fluids.
Montgomery - Chapter 05 #38
FALSE
40. Each volcano has a characteristic eruptive style; the nature of past eruptions indicates whether or not a particular volcano is likely to erupt violently in the future.
Montgomery - Chapter 05 #39
TRUE
41. People can be killed by poisonous gases emitted by a volcano even before they realize that they are in danger.
Montgomery - Chapter 05 #40
TRUE
42. The damage from ash fall in the eruption of Mt. Pinatubo, Philippines in 1991 would have been worse, but fortunately, monsoon rains washed the ash off houses and hillsides.
Montgomery - Chapter 05 #41
FALSE
43. Of the following: various sulfur gases, hydrochloric acid, and carbon monoxide, only carbon monoxide is poisonous.
Montgomery - Chapter 05 #42
FALSE
44. The passage of magma up through the lithosphere may be traced by the shallowearthquake focal depths over time.
Montgomery - Chapter 05 #43
TRUE
45. Construction on any active or dormant volcano in the United States is now prohibited by law because it would be so dangerous.
Montgomery - Chapter 05 #44
FALSE
46. A major concern about possible future eruptions of Mount Rainier is the potential for mudflow damage to nearby cities.
Montgomery - Chapter 05 #45
TRUE

47. So far, Mount St. Helens is the only volcano in the Cascade Range to show any sign of thermal activity.

FALSE

Montgomery - Chapter 05 #47

48. Increased thermal activity (fumaroles, hot springs) in a volcanic area may signal the presence of hot magma at shallow depths in the crust.

TRUE

Montgomery - Chapter 05 #48

49. Volcanic ash from recent eruptions of Aleutian volcanoes has posed a threat to air travel.

TRUE

Montgomery - Chapter 05 #49

50. Explosive volcanoes can be so unpredictable that even volcanologists monitoring and studying them can be killed by unexpected eruptions.

TRUE

Montgomery - Chapter 05 #50

51. The Yellowstone Park volcanic area is along a hot-spot track across the northwestern United States.

TRUE

Montgomery - Chapter 05 #51

5 Summary

<u>Category</u>	<u># of Questions</u>
Montgomery - Chapter 05	51