Volcanoes

Which zone on the stratovolcano hazard map shown below is MOST LIKELY to be for lahars?

	Student Response	Correct Answer
A. A		
B. B		
C. C	☑	☑
D. D		
E. E		

Score: 1/1

Which of the following are NOT measured in volcano monitoring programs?

	Student Response	Correct Answer
A. ground deformation		
B. growth of lava dome	☑	
C. seismic activity		
D. temperature of the magma body at depth		☑
E. gas emissions		

Score: 0/1

Which of the following monitoring techniques covers a large area (100% coverage) and uses fringes to measure ground deformation around a volcano?

	Student Response	Correct Answer
A. correlation spectrometers		
B. global positioning systems		
C. tiltmeters		
D. aerial infrared surveys		
E. satellite radar interferometry	☑	☑

Score: 1/1

Compared to lava, magma of the same chemical composition is _____.

Student Response	Correct Answer
A. crystalline	
B. glassy	
C. hotter	✅
D. more silica-rich	
E. more viscous	

Score: 1/1

What would be the dominant volcanic hazard associated with a cinder cone?

Student Response	Correct Answer
A. large pyroclastic flows	
B. earthquakes > magnitude 5.0	
C. landslides	
D. lava	
E. pyroclastic material	✅

Score: 1/1

The 2 primary gases found in magmas and lavas are _____.

Student Response	Correct Answer
A. water vapour and hydrochloric acid	
B. hydrochloric acid and carbon monoxide.	
C. carbon dioxide and hydrochloric acid	
D. water vapour and carbon dioxide.	✅
E. water vapour and carbon monoxide	

Score: 1/1

The volcanoes that compose the Cascade Range are at a _____.

Student Response	Correct Answer
A. continent-continent collision zone	
B. subduction zone	✅
C. transform plate boundary	
D. triple junction	

E. divergent plate boundary

Score: 1/1

_____ is another name for extrusive igneous rocks and _____ is another name for intrusive igneous rocks.

	Student Response	Correct Answer
A.	volcanic; plutonic	✓
B.	silica-rich; silica-poor	
C.	plutonic; volcanic	
D.	explosive; non-explosive	
E.	granite; basalt	

Score: 1/1

Some of the dangers associated with lahars from Mt. Rainier include all of the following EXCEPT _____.

	Student Response	Correct Answer
A.	lahars can occur with little warning	
B.	lahars can occur in between times of volcanic activity	
C.	lahars can travel long distances	
D.	lahars continuously release toxic gas as they flow	✓
E.	lahars can transport and deposit large quantities of material	

Score: 1/1

_____ is a volcanic landform composed of unconsolidated pyroclastic material with small amounts of lava and usually no more than 10-100's of meters high.

	Student Response	Correct Answer
A.	stratovolcano	
B.	shield volcano	
C.	lava dome	
D.	cinder cone	✓
E.	caldera	

Score: 1/1

Which of the following properties of extrusive igneous rock/magma does NOT depend on its chemical composition?

Student Response	Correct Answer
A. crystal size	✓
B. melting temperature	
C. mineralogy	
D. viscosity	
E. solidification temperature	

Score: 1/1

Which of the following correctly describes volcanism at a continental volcanic arc?

Student Response	Correct Answer
A. low viscosity basaltic lavas and non-explosive volcanism	
B. high viscosity dacitic to rhyolitic lavas and non-explosive volcanism	
C. low viscosity rhyolitic lavas and explosive volcanism	
D. high viscosity dacitic lavas and explosive volcanism	✓
E. high viscosity andesitic to dacitic lavas and non-explosive volcanism	

Score: 1/1

A nearby volcano is erupting pyroclastic flows. Where would you be safest?

Student Response	Correct Answer
A. on the upper floor of a two-story wood building	
B. on the upper floor of a two-story steel-frame building	
C. in a river valley	
D. in a swimming pool	
E. on a ridge top	✓

Score: 1/1

Lahars, pyroclastic flows, and volcanic landslides are all hazards at _____.

Student Response	Correct Answer
A. hot spot volcanoes	

B. volcanoes above subduction zones ✓

C. every volcano on Earth

D. volcanoes at spreading centres

E. volcanoes at continent-continent collision zones

Score: 1/1

Which of the statements about composite volcanoes are TRUE?

Student Response	Correct Answer
A. Mount St. Helens is a composite volcano that can erupt magmas with the entire possible range of silica contents.	✓
B. Mount Rainier is a composite volcano that erupts only andesites.	
C. An example of a composite volcano that erupts both mafic and felsic magmas is Kilauea.	
D. A composite volcano such as Long Valley erupts only pyroclastic flows and the occasional dome.	
E. A composite volcano such as Mauna Loa commonly erupts basalt flows and scoria.	

Score: 1/1

Magma viscosity is increased by _____.

Student Response	Correct Answer
A. high temperature	
B. high silica content	✓
C. melting	
D. low gas content	
E. low silica content	

Score: 1/1

Which statement is TRUE?

Student Response	Correct Answer
A. Scientists are confident in their ability to predict volcanic eruptions hours in advance.	
B. The Alaskan Volcano Observatory uses a numeric (levels 1-4) eruption warning system.	

C. Predicting eruptions can be very costly because many times equipment is completely destroyed. ✓

D. The Volcanic Explosivity Index ranks eruptions based ONLY on the height of the eruption column and the volume of material erupted.

E. The number of eruption-related fatalities has decreased in the past 50 years due to better eruption prediction techniques.

Score: 1/1

Molten material beneath the Earth's surface is called _____.

	Student Response	Correct Answer
A. lava		
B. magma		✓
C. pluton	✓	
D. pumice		
E. basalt		

Score: 0/1

What type of volcano is shown in the figure below?

	Student Response	Correct Answer
A. stratovolcano	✓	
B. cinder cone		✓
C. dome complex		
D. caldera		
E. shield volcano		

Score: 0/1

Which statement about volcanic hazards is FALSE?

	Student Response	Correct Answer
A. Hydrothermal alteration can promote volcanic landslides.		
B. Bombs and blocks affect areas up to 1000 km away from a volcano.		✓
C. Volcanic gases form acid rain that destroy agriculture.		

D. Lahars require only water and unconsolidated pyroclastic material to form.

E. Volcanic landslides commonly turn into mudflows.

During the 1986 Lake Nyos eruption, the most dangerous areas to be in were _____ because the gas was _____.

Student Response	Value
A. on top of hills, less dense than air	
B. on top of hills, flammable	
C. on top of hills, acidic	
D. in valleys, scalding	
E. in valleys, denser than air	100%

Score: 1/1

The "resistance to flow" of any liquid is known as its _____.

Student Response	Value
A. liquidity factor	
B. cooling rate	
C. viscosity	100%
D. solidification constant	
E. runnability	

Score: 1/1

The type of magma most likely to cause a violent volcanic eruption is_____.

Student Response	Value
A. mafic composition	
B. high viscosity and relatively cool	100%
C. low silica composition	
D. low viscosity and relatively warm	
E. low viscosity and relatively cool	

Score: 1/1

Which volcanic hazard does hydrothermal alteration promote?

Student Response	Value
A. landslides	100%
B. lava flows	

C. pyroclastic flows
D. tephra/ash
E. lateral blasts

Score: 1/1

Most volcanic ash is formed by _____.

Student Response	Value
A. burnt material escaping from the volcano.	
B. the rapid growth and destruction of gas bubbles within the magma.	100%
C. extremely high temperatures in low volatility volcanoes.	
D. the destruction of the volcanic cone.	
E. rivers of lava running along the surface.	

Score: 1/1

Which would be the LEAST likely volcanic hazard at Mount Baker (part of the Cascade Range)?

Student Response	Value
A. lava flows	100%
B. lahars	
C. tephra	
D. volcanic landslides	
E. pyroclastic flows	

Score: 1/1

The Volcanic Explosivity Index (VEI) is based on all of the following EXCEPT _____.

Student Response	Value
A. the height of an eruption column	
B. the recurrence interval of eruptions	100%
C. the volume of material erupted	
D. the duration of an eruption	
E. eruptive style	

Score: 1/1

The Cascade arc sits adjacent to a plate boundary where the _____ plate is _____ the _____.

Student Response	Value
A. Juan de Fuca; spreading away from; Pacific plate	
B. Juan de Fuca; subducting beneath; North American plate	100%
C. Juan de Fuca; sliding northward past; North American plate	
D. Pacific Plate; subducting beneath; North American plate	
E. Pacific Plate; sliding northward past; North American plate	

Score: 1/1

A volcano that is likely to erupt will MOST LIKELY show which of the following combination of precursors?

Student Response	Value
A. abundant 'fringes' on InSAR images; increased COSPEC measurements; unseasonal melting of snow	100%
B. few 'fringes' on InSAR images; lava dome expansion; decreased seismic activity	
C. increased COSPEC measurements; increased seismic activity; lava dome deflation	
D. increased seismic activity; unseasonal melting of snow; lava dome deflation	
E. lava dome expansion; decreased COSPEC measurements; decreased seismic activity	

Score: 1/1

Arrange the following volcanic gases, which are produced in explosive eruptions, in order of typical ABUNDANCE:

[-----] MOST abundant
[-----]
[-----] LEAST abundant

Student Response	Value
Arrange the following volcanic gases, which are produced in explosive eruptions, in order of typical ABUNDANCE:	
[water vapour, H_2O] MOST abundant [carbon dioxide, CO_2] [sulfur dioxide, SO_2] LEAST abundant	