

y 12 Igneous Rock Lab Questions

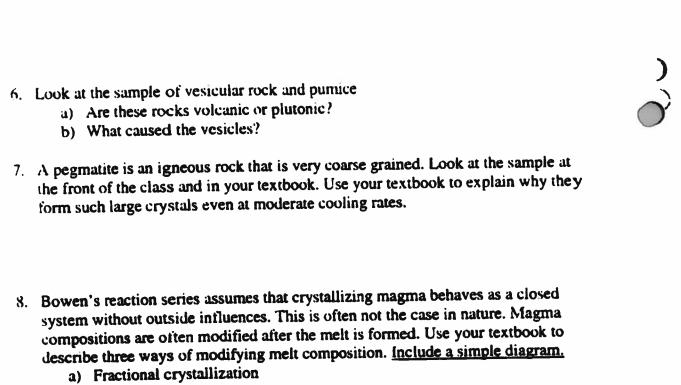
Name:

Use your <u>composition of minerals in igneous rock</u> table, <u>Bowen's reaction series</u> and your <u>mineral identification chart</u> to answer the following questions.

- 1. Look at the granite sample
 - a) Identify three different minerals in that sample.
 - b) What properties did you use to identify the minerals?
 - c) Approximately what percentage of each mineral should be in your sample?
 - d) At what temperature (high or low) are these minerals stable?
- 2. Look at the gabbro sample
 - a) Identify three different minerals in that sample.
 - b) What properties did you use to identify the minerals?
 - c) Approximately what percentage of each mineral should be in your sample?
 - d) At what temperature (high or low) are these minerals stable?
- 3. Look at the andesite sample
 - a) Can you dentify any different minerals in that sample?
 - b) Why or why not?
 - c) Approximately what percentage of each mineral should be in your sample?
 - d) At what temperature (high or low) are these minerals stable?
- 4. Look at the sample of obsidian
 - a) Is this a volcanic or plutonic rock? How can you tell?
 - b) Describe the texture.
- 5. Look at the sample of porphyrite rock
 - a) What colour is the groundmass?
 - b) What colour are the phenocrysts?
 - c) What caused the two different crystal sizes?







b) Assimilates

c) Magma mixing

Geology 12 Igneous Rock Lab Questions

Name: Key

Use your composition of minerals in igneous rock table, Bowen's reaction series and your mineral identification chart to answer the following questions.

1.		t the granite sample
	a)	Identify three different minerals in that sample. Quartz, Potassium Feldspar, Plasioclase Reldspar, Muscourle, Dark Ferroma,
	b)	What properties did you use to identify the minerals?
	c)	Approximately what percentage of each mineral should be in your sample? 50-75% Feld 0-8% muscome 0-8% muscome 0-12% drk Fero muscome 0-1
	d)	At what temperature (high or low) are these minerals stable?
2.	Look a	at the gabbro sample
	•	Plaz Feldspor Brothe, Amphibale, Ryvoxene, Olivine
	b)	What properties did you use to identify the minerals?
		Color, cleavase
	c)	Approximately what percentage of each mineral should be in your sample? 15-45% of play feld
	d)	At what temperature (high or low) are these minerals stable?
	۵)	high
3.	Look	at the andesite sample
	a)	Can you dentify any different minerals in that sample?
	b)	Why or why not? Crystals too small
	c)	Approximately what percentage of each mineral should be in your
		sample? Same as Granite
	ĺ	At what temperature (high or low) are these minerals stable?
4.	Look	at the sample of obsidian
	a) b)	Is this a volcanic or plutonic rock? How can you tell? Lexture. Describe the texture G GSSY
5	a	at the sample of porphyrite rock What colour is the groundmass? Market What colour are the phanographs?
	n	What colour are the directory vars:
	c	What caused the two different crystal sizes? 2 stage Cooling

6.	a) Are these rocks volcanic or plutonic? Volcanic b) What caused the vesicles? Gas not escaping
7.	A pegmatite is an igneous rock that is very coarse grained. Look at the sample at the front of the class and in your textbook. Use your textbook to explain why they form such large crystals even at moderate cooling rates.
	form such large crystals even at moderate cooling rates. Volatiles Keep masma more fluid so atoms can alish as big crystals
8.	Bowen's reaction series assumes that crystallizing magma behaves as a closed system without outside influences. This is often not the case in nature. Magma compositions are often modified after the melt is formed. Use your textbook to describe three ways of modifying melt composition. Include a simple diagram.
	- Early formed crystals removed or isolated
	- Remaining melt more silicic
	1 ale constals
	1 alu constais Hahc crystais
	b) Assimilates - Hotler make magma incorporates (melts)
	- Mother matic magnitude months
	Relsic country rock mixing it in.
	-More Pelsic
	-177
	c) Magma mixing
	two melts combine - rare because
	neds two districts different mayings in
	He same place and time.
	pu surve plane with time.