

Re: Extra Credit Opportunity for Physical Geology Lab - Minerals

Anna Bailey <baileya16@mailbox.winthrop.edu>

Wed 9/7/2016 2:07 PM

To: Quarles, William A. <quarlesw@winthrop.edu>

1. The best way to tell the difference between quartz and calcite is by looking at their hardness. Quartz has a hardness of 7 while calcite has a hardness of 3.
2. The best way to tell the difference between quartz and feldspar is by looking for cleavage. Feldspar has cleavage, while quartz does not.
3. The best way to tell the difference between muscovite and biotite is by looking at the color or the cleavage that allows it to be broken into little sheets. Muscovite often has a clear, silvery or coppery silver color, while biotite is black.
4. Mineral cleavage explains how a mineral breaks into flat surfaces and is determined by the mineral's crystal structure.
5. Color is not an ideal property to use for identifying silicate minerals because different minerals can look very similar, even though they have different chemical structures. Silicates have a huge range of physical properties and fall within a huge group.
6. The eight major igneous rock-forming minerals are :
Quartz
Alkali feldspar
Plagioclase feldspar
Muscovite mica
Biotite mica
Pyroxene
Amphibole
Olivine

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On Sep 3, 2016, at 9:01 AM, Quarles, William A. <quarlesw@winthrop.edu> wrote:

For up to 2 points (20% of 10 points, so it is not insignificant), reply to this email (be sure you reply only to me) with **your** answers to the following questions, **before** 5:30 P.M., Wednesday, September 7 (next lab, but for both Monday and Wednesday labs).

Do your own work on this, that is, do not just cut and paste from an internet/digital source or from the digital version of the manual. Do not share or discuss with others, or blind copy your email to others. This is for you to learn and benefit from, not to help someone else's grades. We can do that during lab.

For full credit, your answers must be in the form of a complete sentence with correct grammar, spelling, and punctuation, except for #6 which you can just list.

I will email my answers to the group sometime between 5:31 and 6:00 P.M. on the due date, or present them during lab.

Al Quarles

1. What is the best way to tell the difference between quartz and calcite? explain
2. What is the best way to tell the difference between quartz and feldspar? explain
3. What is the best way to tell the difference between muscovite and biotite? explain
4. Describe mineral cleavage.

5. Why is color not an ideal property to use for identifying silicate minerals?

6. Name the eight major igneous rock-forming silicate minerals (hint, see the Bowen's Reaction Series).