

ENCE231: Engineering Geology (Section 3)

Quiz 2 (Chapter 2: Minerals)

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1. A rock composed of more than one mineral is: [0.5 point]
 - a) Monomineralic
 - b) Polymineralic
 - c) Non-mineralic
2. Choose the type of chemical bonding that forms the mineral halite (commonly known as salt): [0.5 p]
 - a) Ionic bonding
 - b) covalent bonding
 - c) hydrogen bonding
3. Cleavage is one of the physical properties used to identify minerals. Thoroughly describe Cleavage. [2 points]

cleavage: is the tendency of a mineral to break along its plane of weak bonding when it's stressed. Those minerals have cleavage has identify by its smooth surface. Exp^o: 2 plane at 90°

4. The hardness of Orthoclase Feldspar is 6 [0.5 point] 2 plane at 60° and 120° one plane and some minerals don't have cleavage.
5. What are the two most common mineral-forming elements? [1 point]

① silicate ② carbonate (cost)

Si⁺⁴ O⁻²

6. Name the five Structures of Silicate Mineral resulting from the way silicon-oxygen tetrahedra bond: [2.5 points]
 - ① single tetrahedra
 - ② single chain
 - ③ double chain
 - ④ sheet
 - ④ 3-D network

7. Describe thoroughly all the chemical and physical properties of the silicate mineral Augite (Pvroxene Group): [2 points]

structure → single chain color → black mineral
 → found in fozelt (extrusive igneous rock)

8. According to Bowen's Reaction Series, what is the first mineral to crystallize as a Magma cools: [1 point]

olivine

Bonus: Which one of the two major silicate mineral groups has a higher content of Silica and the least content of Iron & Magnesium? [1 point]

quartz → light mineral silicate