

Review: CH 2 - Minerals**Completion**

Complete each statement.

1. The smallest part of an element that still retains the element's properties is a(n) _____.
2. A(n) _____ is an electrically neutral subatomic particle found in the nucleus of an atom.
3. Atoms of the same element that have different mass numbers are called _____.
4. The sum of the neutrons and protons in the nucleus is the atom's _____.
5. Most minerals are composed of two or more elements joined to form a chemically stable _____.
6. Compounds with _____ bonds are poor conductors of electricity, even when melted.
7. A naturally occurring, inorganic solid that has an orderly crystalline structure and a definite chemical composition is a(n) _____.
8. As magma cools, the first minerals to _____ are rich in iron, calcium, and magnesium.
9. Minerals are classified into groups based on _____.
10. Silicon and oxygen combine to form the framework of the most common mineral group, the _____ minerals.
11. Small amounts of different elements in the same mineral can change the _____ of the mineral.
12. When minerals form slowly without space restrictions, they will develop _____.
13. The tendency of a mineral to break along planes of weak bonding is called _____.
14. The ratio of a mineral's mass to its volume is its _____.
15. The mineral _____ is strongly magnetic.

Short Answer

16. List the two most common elements, along with their chemical symbols, found in Earth's continental crust.
17. If an atom has 17 electrons and its mass number is 35, calculate the following: number of protons, atomic number, and number of neutrons.
18. In what way does an isotope vary from the common form of the same element?
19. What is a compound?
20. What is a mineral?
21. What are the four major processes by which minerals form?

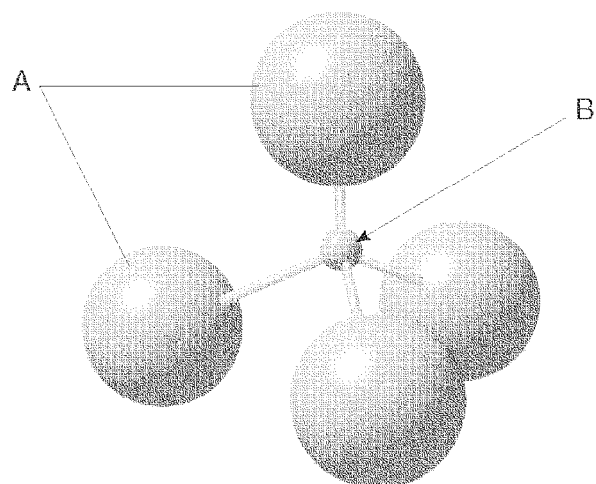


Figure 2-1

22. What types of structures does a silicon-oxygen tetrahedron, shown in Figure 2-1, combine to form?
23. According to Figure 2-1, what atoms in the silicon-oxygen tetrahedron are labeled A?

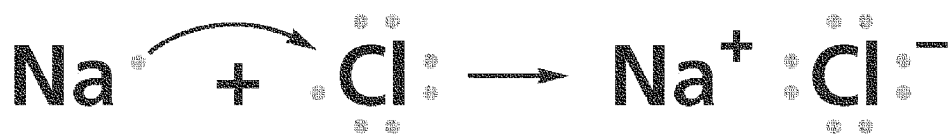


Figure 2-2

24. What type of bonding is represented in Figure 2-2?
25. What is the mineral represented in Figure 2-2, and into which group would it be classified?
26. Why is color often an unreliable property in identifying minerals?
27. Briefly describe the mineral property of luster.
28. Why do some minerals exhibit cleavage while others have fracture?
29. Calcite has a density of 2.71 g/cm^3 . If a sample of calcite has a volume of 0.91 cm^3 , what is the mass of the sample?
30. Describe the mineral property of calcite known as double refraction.

Essay

31. Give an example of a location on or within Earth where minerals are formed. Provide one example for each of the four major processes of mineral formation.
32. Explain why most mineral samples do not visibly show their crystal form.