

GEOLOGY 12
CHAPTER 2 WORKSHEET
MINERALS AND ROCKS

Name _____

1. An _____ is the smallest particle into which an element can be subdivided and still retain its distinctive chemical characteristics.
2. Atoms of the same element which have different atomic mass numbers are known as _____.
3. A positively charged atom is called a(n) _____.
4. A negatively charged atom is called a(n) _____.
5. In a covalent chemical bond, atoms share _____.
6. Synthetic gemstones are not true minerals because they are not _____.
7. When a mineral composition includes elements in a _____, those elements can interchange in the mineral's structure because the elements have a similar size and charge.
8. In order for crystals of a given mineral to form, there must be time for the atoms to arrange themselves into a(n) _____.
9. A _____ may be described as a solid which cools so rapidly from a liquid that the atoms remain randomly arranged in a noncrystalline form.
10. The two fundamental characteristics of a mineral which will distinguish it from all other minerals are its composition and its _____.
11. Diamond and graphite, which have the same composition but very different crystal structures, are examples of _____.
12. _____ is the ability of a mineral to resist scratching.
13. The tendency of a mineral to break preferentially along planes of weakness is called _____.
14. Gold can easily be distinguished from pyrite on the basis of its _____, another physical property of minerals
15. _____, the color of the powdered mineral, is more consistent than the color of a bulk mineral.
16. The largest mineral group in the earth's crust is the _____ group.
17. Pyroxenes and amphiboles are two types of _____ silicates, in which silica tetrahedra share oxygen atoms in only one dimension.

18. The micas and clay minerals are types of _____ silicates, in which silica tetrahedra share oxygen atoms in two dimensions.
19. Biotite, a mica, has excellent _____ in one plane because of its crystal structure.
20. Quartz has a(n) _____ structure, where there are no planes of weaker bonds in the mineral; as a result, quartz lacks cleavage and will fracture when broken.
21. Silicate minerals which are rich in iron and magnesium are termed _____ silicates.
22. The most important and abundant carbonate mineral is _____.
23. The mineral pyrite, or "fool's gold", is a familiar _____ mineral.
24. Sapphires and rubies are gemstone varieties of the aluminum oxide mineral, _____.
25. Gold, silver, and copper are all examples of _____, _____, or minerals which exists as single chemical elements.
26. The atomic number of an element is equal to the number of
A. protons in the nucleus
B. neutrons in the nucleus
C. electrons swirling around the nucleus
D. protons plus neutrons in the nucleus
27. In a neutrally charged atom, which of the following situations would be true?
A. the number of electrons is greater than the number of neutrons
B. the number of electrons is equal to the number of protons
C. the number of protons is equal to the number of neutrons
D. the number of neutrons is greater than the sum of the electrons and protons
28. Which of the following is NOT an example of a mineral?
A. halite B. sugar C. quartz D. diamond
29. Which mineral below could attract metal objects to itself?
A. hematite B. pyrite C. olivine D. magnetite
30. Which pair of common mineral-forming elements below is most likely to be found in solid solution in a mineral composition?
A. graphite and diamond
B. magnesium (Mg^{2+}) and (Fe^{2+})
C. oxygen (O^{2-}) and calcium (Ca^{2+})
D. potassium (K^{1+}) and sodium (Na^{1+})