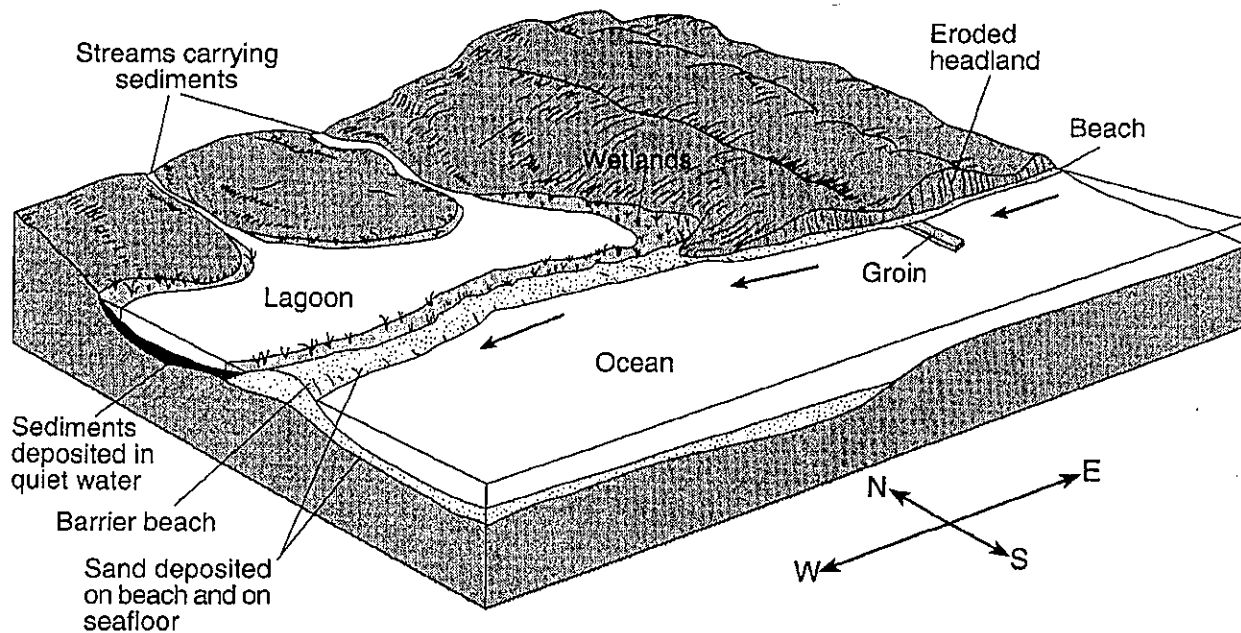


STATION 1

1. Which rock would be the best source of the mineral garnet?
A) basalt B) limestone
C) schist D) slate
 2. Which rock is composed of the mineral halite that formed when seawater evaporated?
A) limestone B) dolostone C) rock gypsum D) rock salt
 3. Which element, found in both biotite mica and muscovite mica, makes up the greatest percent by volume of Earth's crust?
A) nitrogen B) oxygen
C) potassium D) silicon
 4. Which mineral can be found in all samples of rhyolite and andesite?
A) pyroxene B) quartz
C) biotite D) potassium feldspar
 5. Silicate minerals contain the elements silicon and oxygen. Which list contains only silicate materials?
A) graphite, talc, and selenite gypsum
B) potassium feldspar, quartz, and amphibole
C) calcite, dolomite, and pyroxene
D) biotite mica, fluorite, and garnet
 6. Which mineral is the major component of drywall?
A) talc B) calcite
C) muscovite mica D) selenite gypsum
-

7. Base your answer to the following question on the diagram below. The arrows show the direction in which sediment is being transported along the shoreline. A barrier beach has formed, creating a lagoon (a shallow body of water in which sediments are being deposited). The eroded headlands are composed of diorite bedrock. A groin has recently been constructed. Groins are wall-like structures built into the water perpendicular to the shoreline to trap beach sand.



Which two minerals are most likely found in the beach sand that was eroded from the headlands?

- A) quartz and olivine
 B) plagioclase feldspar and amphibole
 C) potassium feldspar and biotite
 D) pyroxene and calcite
8. The table below shows some properties of four different minerals.

Mineral Variety	Color	Hardness	Luster	Composition
flint	black	7	nonmetallic	SiO_2
chert	gray, brown, or yellow	7	nonmetallic	SiO_2
jasper	red	7	nonmetallic	SiO_2
chalcedony	white or light color	7	nonmetallic	SiO_2

The minerals listed in the table are varieties of which mineral?

- A) garnet
 B) magnetite
 C) quartz
 D) olivine

9. The three statements below are observations of the same rock sample:

- The rock has intergrown crystals from 2 to 3 millimeters in diameter.
- The minerals in the rock are gray feldspar, green olivine, green pyroxene, and black amphibole.
- There are no visible gas pockets in the rock.

This rock sample is most likely

- A) sandstone B) gabbro
C) granite D) phyllite

10. Which mineral can be found in granite, andesite, gneiss, and hornfels?

- A) quartz B) pyroxene
C) olivine D) biotite mica

11. Which rock is usually composed of several different minerals?

- A) rock gypsum
B) chemical limestone
C) quartzite
D) gneiss

12. In which group are all the earth materials classified as minerals?

- A) feldspar, quartz, and olivine
B) granite, rhyolite, and basalt
C) cobbles, pebbles, and silt
D) conglomerate, sandstone, and shale

13. Base your answer to the following question on the mineral chart below and on your knowledge of Earth science. The mineral chart lists some properties of five minerals that are the major sources of the same metallic element that is used by many industries.

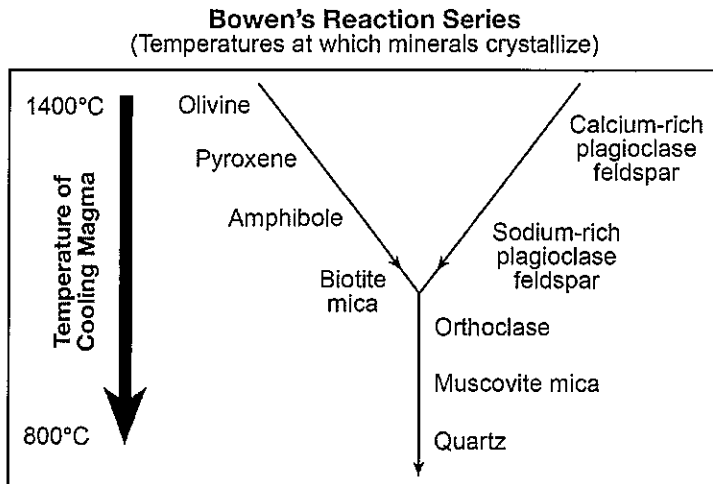
Mineral Chart

Mineral Name	Composition	Density (g/cm ³)	Hardness	Streak	Nonmetallic Luster	Common Colors
brucite	Mg(OH) ₂	2.4	2.5-3	white	glassy to waxy	white
carnallite	KMgCl ₃ •6H ₂ O	1.6	2.5	white	greasy	white
dolomite	CaMg(CO ₃) ₂	2.8	3.5-4	white	glassy to waxy	shades of pink
magnesite	MgCO ₃	3.1	3.5-4.5	white	glassy	white
olivine	(Fe,Mg) ₂ SiO ₄	3.3	6.5	white	glassy	green

Which mineral might scratch the mineral fluorite, but would *not* scratch the mineral amphibole?

- A) brucite B) magnesite C) carnallite D) olivine

14. The diagram of Bowen's Reaction Series below indicates the relative temperatures at which specific minerals crystallize as magma cools.



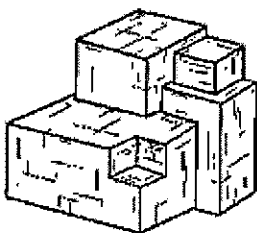
Which statement is best supported by Bowen's Reaction Series?

- A) Most minerals crystallize at the same temperature.
 - B) Most felsic minerals usually crystallize before most mafic minerals.
 - C) Muscovite mica and quartz are the last minerals to crystallize as magma cools.
 - D) Biotite mica is the first mineral to crystallize as magma cools.
15. Base your answer to the following question on the data table below and on your knowledge of Earth science. The table provides information about four minerals, *A* through *D*.

Data Table

Mineral	Breakage	Hardness	Luster	Color
A	cleavage	2.5	metallic	silver
B	cleavage	2.5	nonmetallic	black
C	cleavage	3	nonmetallic	colorless
D	fracture	6.5	nonmetallic	green

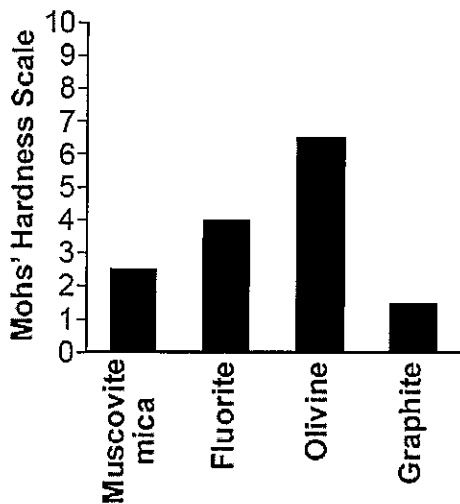
The diagram below represents a sample of mineral *A*.



Mineral *A* is most likely

- A) garnet
- B) galena
- C) olivine
- D) halite

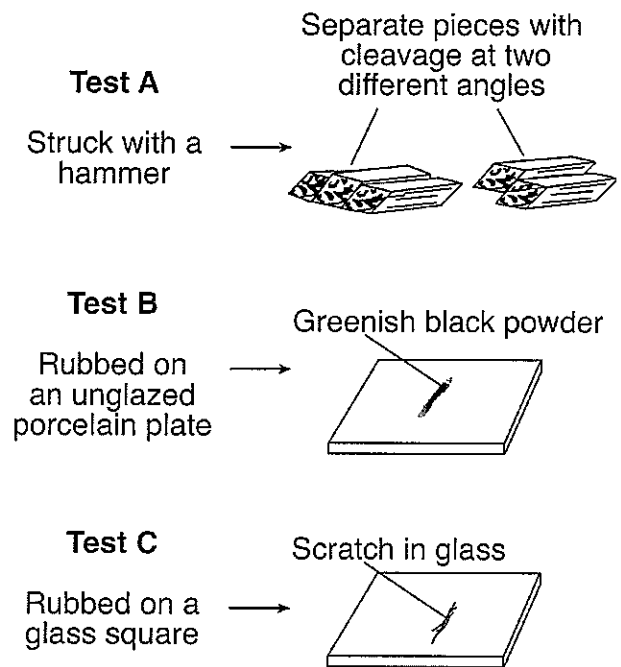
16. The graph below shows the hardness of four minerals.



Which mineral is hard enough to scratch calcite but is *not* hard enough to scratch amphibole?

- A) muscovite mica B) fluorite
C) olivine D) graphite
17. Which mineral would most likely become rounded at the fastest rate when tumbled along
- A) garnet
B) pyroxene
C) plagioclase feldspar
D) selenite gypsum
18. Which mineral will scratch fluorite, galena, and pyroxene?
- A) graphite B) calcite
C) olivine D) dolomite
19. What is the approximate density of a mineral with a mass of 262.2 grams that displaces 46 cubic centimeters of water?
- A) 1.8 g/cm³ B) 5.7 g/cm³
C) 6.1 g/cm³ D) 12.2 g/cm³

20. Base your answer to the following question on the diagram below, which shows the results of three different physical tests, *A*, *B*, and *C*, that were performed on a mineral.



The luster of this mineral could be determined by

- A) using an electronic balance
B) using a graduated cylinder
C) observing how light reflects from the surface of the mineral
D) observing what happens when acid is placed on the mineral

Answer Key
station 1

1. C
 2. D
 3. B
 4. C
 5. B
 6. D
 7. B
 8. C
 9. B
 10. A
 11. D
 12. A
 13. B
 14. C
 15. B
 16. B
 17. D
 18. C
 19. B
 20. C
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