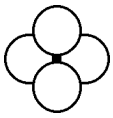
Name: _____ Period: _____ Date: _____

WS Minerals

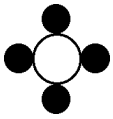
___ 1) Which diagram *best* represents the silicon-oxygen tetrahedron of which talc, feldspar, and quartz are composed?

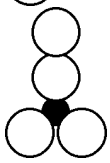
KEY:

● Silicon ◒ Oxygen

A) 

C) 

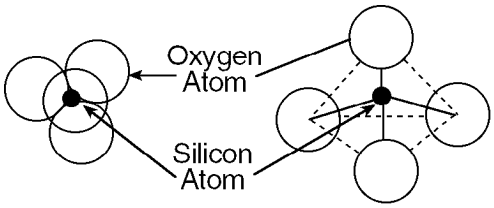
B) 

D) 

___ 2) What is the *best* way to determine if a mineral sample is calcite or quartz?

A) Measure the mass of the mineral.
B) Place a drop of acid on the mineral.
C) Place the mineral near a magnet.
D) Observe the color of the mineral.

___ 3) The diagram below represents top and side views of a model of the silicate tetrahedron.



This tetrahedron is found in large amounts in the Earth's

A) lithosphere
B) stratosphere
C) troposphere
D) hydrosphere

___ 4) One of the most abundant minerals in beach sand is quartz. Which property of quartz could account for its abundance?

A) texture
B) hardness
C) color
D) luster

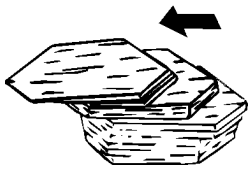
___ 5) Which element comprises most of the Earth's crust *both* by weight and by volume?

A) hydrogen
B) nitrogen
C) oxygen
D) silicon

___ 6) Which mineral is white or colorless, has a hardness of 2.5, and splits with cubic cleavage?

A) mica
B) pyrite
C) halite
D) calcite

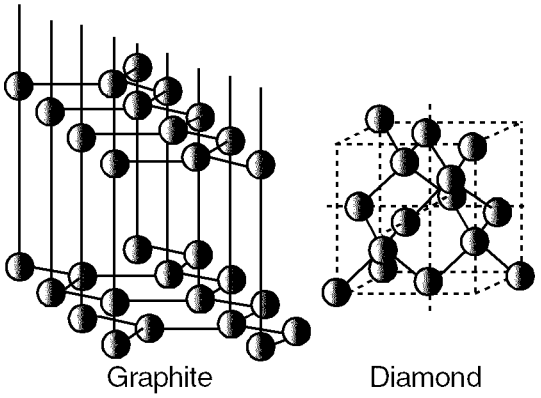
___ 7) The diagram below shows how a sample of the mineral mica breaks when hit with a rock hammer.



This mineral breaks in smooth, flat surfaces because it

A) has a regular arrangement of atoms
B) is very dense
C) is very hard
D) contains large amounts of iron

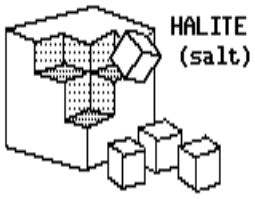
___ 8) The diagrams below represent the arrangements of carbon atoms in the minerals graphite and diamond.



Which conclusion about graphite and diamond is *best* supported by these diagrams?

A) They have different physical properties due to the difference in their atomic arrangements.
B) They have a similar color because of their similar compositions.
C) They have different chemical compositions due to the difference in their atomic arrangements.
D) They have similar crystal shapes because of their similar compositions.

___ 9) What causes the characteristic crystal shape and cleavage (Breaking along flat surfaces) of the mineral halite as shown in the diagram below?



A) metamorphism of the halite
B) the shape of the other minerals located where the halite formed
C) the internal arrangement of the atoms in halite
D) the amount of erosion the halite has undergone

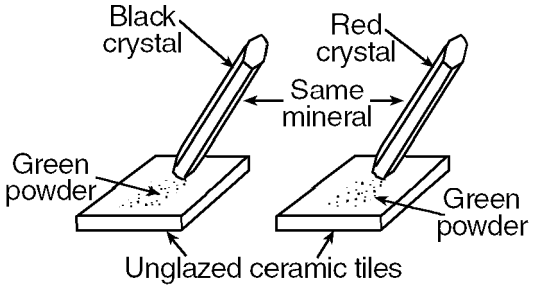
___ 10) According to the *Properties of Common Minerals* Earth Science reference table, which mineral scratches dolomite and is scratched by olivine?

A) quartz
B) galena
C) potassium feldspar
D) muscovite mica

___ 11) According to the *Properties of Common Minerals* Earth Science reference table, which mineral leaves a green-black powder when rubbed against an unglazed porcelain plate?

A) galena
B) pyrite
C) hematite
D) graphite

___ 12) The diagram below shows the results of one test for mineral identification.



Which mineral property is being tested?

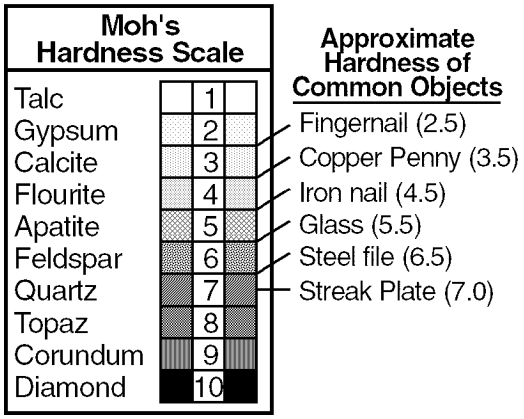
A) fracture
B) density
C) luster
D) streak

___ 13) Which element combines with silicon to form the tetrahedral unit of structure of the silicate minerals?

A) hydrogen
B) potassium
C) nitrogen
D) oxygen

Questions 14 through 17 refer to the following:

MINERAL HARDNESS



___ 14) The durable gemstones ruby and sapphire are valuable due to their color and hardness. These gemstones would most likely be located on Moh's scale at the hardness level of

A) 1
B) 3
C) 9
D) 4

___ 15) Moh's scale arranges minerals according to their relative

A) specific gravity
B) resistance to scratching
C) resistance to breaking
D) specific heat

___ 16) Moh's scale would be most useful for

A) finding the mass of a mineral sample
B) finding the density of a mineral sample
C) counting the number of cleavage surfaces of a mineral sample
D) identifying a mineral sample

___ 17) Which statement is *best* supported by the data shown?

A) Apatite is softer than a copper penny.
B) A streak plate is composed of quartz.
C) An iron nail contains fluorite.
D) Topaz is harder than a steel file.

___ 18) An unidentified mineral that is softer than calcite exhibits a metallic luster and cubic cleavage. This mineral most likely is

A) galena
B) pyroxene
C) halite
D) pyrite

___ 19) Which mineral will scratch glass (hardness = 5.5), but *not* pyrite?

A) gypsum
B) quartz
C) fluorite
D) orthoclase

___ 20) Which property is most useful in mineral identification?

A) size
B) color
C) hardness
D) texture

___ 21) What mineral is an ore of iron and has a characteristic reddish brown streak?

A) pyrite
B) hematite
C) magnetite
D) olivine

___ 22) The table below indicates the presence of various minerals in different rock samples.

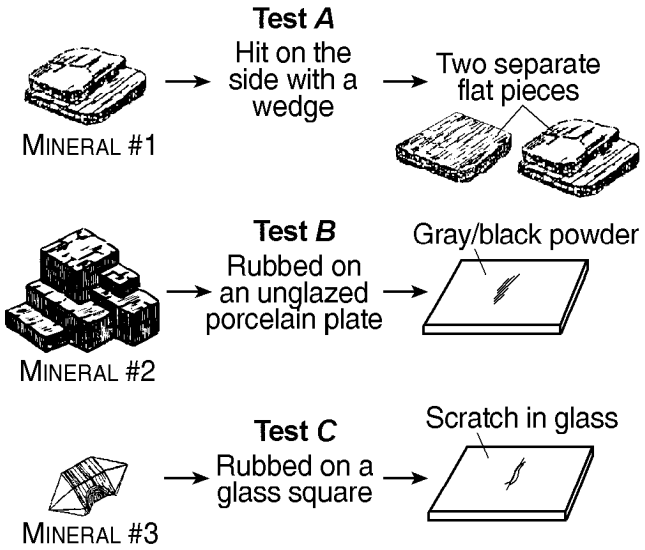
Rock Sample	Mineral Compostion								
	Quartz	Potassium feldspar	Plagioclase feldspar	Biotite	Hornblende	Pyroxene	Olivine	Calcite	Others
Granite	✓	✓	✓	✓	✓				
Rhyolite	✓	✓	✓	✓	✓				
Pumice	✓	✓	✓	✓	✓				
Conglomerate	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slate				✓					✓
Marble								✓	
Limestone								✓	
Basalt			✓		✓	✓	✓		
Gabbro			✓	✓	✓	✓			

KEY:
✓ = mineral is present

Which statement is an accurate conclusion based on the information provided in the table?

A) Many rocks have a number of minerals in common.
B) All rocks are polymineralic.
C) Only igneous rocks contain quartz.
D) Most rocks are monomineralic.

___ 23) The diagram below shows three minerals with three different physical tests, *A*, *B*, and *C*, being performed on them.



Which sequence correctly matches each test, *A*, *B*, and *C*, with the mineral property tested?

A) *A* — cleavage; *B* — streak; *C* — hardness
B) *A* — streak; *B* — hardness; *C* — cleavage
C) *A* — streak; *B* — cleavage; *C* — hardness
D) *A* — cleavage; *B* — hardness; *C* — streak