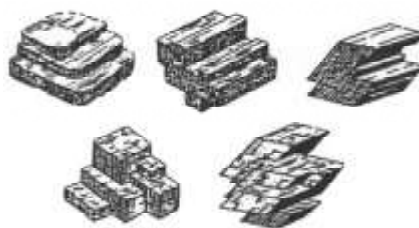


MINERALS REVIEW

1. The diagrams below represent samples of five different minerals found in the rocks of the Earth's crust.

Which physical property of minerals is represented by the flat surfaces in the diagrams?

- (1) magnetism
- (2) hardness
- (3) cleavage
- (4) crystal size



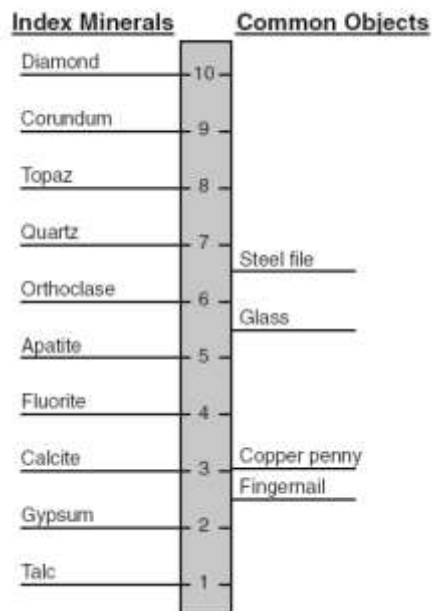
2. Scratching a mineral against a glass plate is a method used for determining the mineral's
- (1) hardness
 - (2) color
 - (3) luster
 - (4) cleavage
3. Minerals are identified on the basis of
- (1) the method by which they were formed
 - (2) the size of their crystals
 - (3) the type of rock in which they are found
 - (4) their physical and chemical properties
4. Although diamonds and graphite both consist of the element carbon, their physical properties are very different. The most likely explanation for these differences is that
- (1) the internal arrangement of carbon atoms is different in each mineral
 - (2) graphite contains impurities not found in diamonds
 - (3) graphite contains radioactive carbon-14 but diamonds do not
 - (4) diamonds contain silicate tetrahedra but graphite does not
5. Which property is most useful in distinguishing pyroxene from amphibole?
- (1) sample size
 - (2) hardness
 - (3) type of luster
 - (4) angles of cleavage
6. Which mineral has a metallic luster, a black streak, and is an ore of iron?
(an ore is a mineral mined for an element of economic value)
- (1) galena
 - (2) magnetite
 - (3) pyroxene
 - (4) graphite
7. 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?

- (1) garnet
- (2) magnetite
- (3) quartz
- (4) olivine

8. The diagram to the right shows the index minerals of Mohs hardness scale compared with the hardness of some common objects.



Which statement is best supported by the diagram?

- (1) A fingernail will scratch calcite but not gypsum.
- (2) Calcite will be scratched by a copper penny.
- (3) The mineral apatite will scratch topaz.
- (4) A steel file has a hardness of about 7.5.

9. The data table below shows the density of four different mineral samples.

A student accurately measured the mass of a sample of one of the four minerals to be 294.4 grams and its volume to be 73.6 cm³.

Data Table

Mineral	Density (g/cm ³)
corundum	4.0
galena	7.6
hematite	5.3
quartz	2.7

Which mineral sample did the student measure?

- (1) corundum
- (2) galena
- (3) hematite
- (4) quartz

10. The mineral wollastonite has a hardness of 4.5 to 5. Which New York State mineral could easily scratch wollastonite?

- (1) garnet
- (2) halite
- (3) talc
- (4) gypsum

11. A student created the table below by classifying six minerals into two groups, A and B, based on a single property.

Which property was used to classify these minerals?

- (1) color
- (2) luster
- (3) chemical composition
- (4) hardness

Group A	Group B
olivine	pyrite
garnet	galena
calcite	graphite

12. Which mineral would be attracted to a magnet?

- (1) galena
- (2) magnetite
- (3) graphite
- (4) calcite

13. The mineral graphite is often used as
- (1) a lubricant
 - (2) an abrasive
 - (3) a source of iron
 - (4) a cementing material

14. The table below shows some observed physical properties of a mineral.

Physical Property	Observation
color	white
hardness	scratched by the mineral calcite
distinguishing characteristic	feels greasy
cleavage/fracture	shows some definite flat surfaces

Based on these observations, the elements that make up this mineral's composition are

- (1) sulfur and lead
- (2) sulfur, oxygen, and hydrogen
- (3) oxygen, silicon, hydrogen, and magnesium
- (4) oxygen, silicon, aluminum, and iron

Base your answers to **questions 15 and 16** on the photograph. The photograph shows several broken samples of the same colorless mineral.

15. Which physical property of this mineral is most easily seen in the photograph?
- (1) fracture
 - (2) hardness
 - (3) streak
 - (4) cleavage
16. Which mineral is most likely shown in the photograph?
- (1) quartz
 - (2) calcite
 - (3) galena
 - (4) halite



17. How are the minerals biotite mica and muscovite mica different?
- (1) Biotite mica is colorless, but muscovite mica is not.
 - (2) Biotite mica contains iron and/or magnesium, but muscovite mica does not.
 - (3) Muscovite mica scratches quartz, but biotite mica does not.
 - (4) Muscovite mica cleaves into thin sheets, but biotite mica does not.
18. Which home-building material is made mostly from the mineral gypsum?
- (1) plastic pipes
 - (2) window glass
 - (3) drywall panels
 - (4) iron nails

19. The internal atomic structure of a mineral most likely determines the mineral's
(1) color, streak, and age (3) size, location, and luster
(2) origin, exposure, and fracture (4) hardness, cleavage, and crystal shape
20. Which is the hardest mineral on Moh's scale?
(1) talc (3) quartz
(2) diamond (4) garnet
21. The mineral quartz breaks unevenly. This means that quartz must have
(1) a high density (3) cleavage
(2) fracture (4) a metallic luster
22. A student rubs a small sample of a mineral on a tile to see the color of its powder. The student is trying to determine the mineral's
(1) density (3) streak
(2) chemical composition (4) luster
23. Which of the following physical properties cannot be observed with just one's eyes, but an actual physical test must be conducted?
(1) crystal shape (3) color
(2) hardness (4) luster
24. The mineral that reacts to hydrochloric acid is
(1) halite (3) sulfur
(2) quartz (4) calcite
25. Which mineral is made up of only one element?
(1) biotite mica (3) olivine
(2) quartz (4) sulfur
26. The mineral that has a greasy feel and is used as pencil "lead" is
(1) halite (3) graphite
(2) pyrite (4) quartz
27. The mineral that is found in sheets and has cleavage in one direction is known as
(1) olivine (3) potassium feldspar
(2) muscovite mica (4) quartz
28. Which mineral has a different color than its streak, has a metallic luster, and can be an ore of both iron and sulfur?
(1) gypsum (3) pyrite
(2) galena (4) magnetite

29. Which mineral is the softest?
 (1) talc (3) amphiboles
 (2) muscovite mica (4) olivine
30. Which of the following is the most difficult to scratch?
 (1) garnet (3) hematite
 (2) potassium feldspar (4) calcite
31. Which of the following is a silicate mineral? (a silicate mineral contains both silicon and oxygen)
 (1) magnetite (3) fluorite
 (2) halite (4) plagioclase feldspar
32. Which mineral cleaves in two directions at 90°?
 (1) fluorite (3) olivine
 (2) potassium feldspar (4) quartz
33. A human fingernail has a hardness of approximately 2.5.
 Which two minerals are *softer* than a human fingernail?
 (1) calcite and halite (3) gypsum and talc
 (2) sulfur and fluorite (4) pyrite and magnetite
34. Which mineral contains iron, has a metallic luster, is hard, and has the same color and streak?
 (1) galena (3) graphite
 (2) magnetite (4) pyrite
35. Which mineral would most likely break down the most after being placed in a container and shaken for 5 minutes?
 (1) quartz (3) halite
 (2) garnet (4) pyroxene

36. The photograph below shows a broken piece of the mineral calcite. The calcite breaks in smooth, flat surfaces because calcite
 (1) is very dense (3) contains certain impurities
 (2) is very soft (4) has a regular arrangement of atoms



37. What is the mineral name of table salt? _____
38. Which mineral has rhombohedral cleavage? (this means it is shaped like a parallelogram) _____

39. Which mineral has a density of 7.6 g/cm^3 - a density almost 3X the average density of minerals found at the Earth's surface? _____
40. If a mineral scratches glass, is it considered soft or hard? _____
41. What element does the chemical symbol "Fe" stand for? _____
42. Under the *Common Colors* column, many minerals are listed as having a "variable" color. What is meant by the term "variable"? _____
43. Which non-metallic mineral is softer than a fingernail and displays fracture? _____
44. What is one difference between plagioclase and potassium feldspar? _____
45. Which mineral is also known as "fool's gold"? _____
46. What is the chemical composition of calcite? _____
47. Which two minerals display cubic cleavage? _____
48. Name the mineral known for its characteristic "blood red" (reddish brown) streak. _____
49. Which mineral has water as part of its chemical composition? _____
50. The term "granular" means that a mineral has a grainy / sandy feel. Which mineral is commonly granular? _____