

Set 1 — Scheme for Igneous Rock Identification

Which three minerals are most commonly found in the igneous rock granite?

- (1) amphibole, calcite, and hematite
- (2) amphibole, biotite mica, and gypsum
- (3) plagioclase feldspar, pyroxene, and olivine
- (4) plagioclase feldspar, potassium feldspar, and quartz

1 _____

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

- (1) sandstone
- (2) gabbro
- (3) granite
- (4) rhyolite

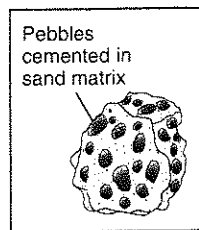
2 _____

Which intrusive igneous rock could be composed of approximately 60% pyroxene, 25% plagioclase feldspar, 10% olivine, and 5% amphibole?

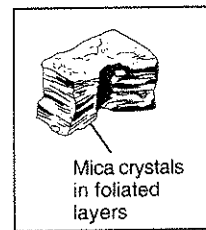
- (1) granite
- (2) rhyolite
- (3) gabbro
- (4) basalt

3 _____

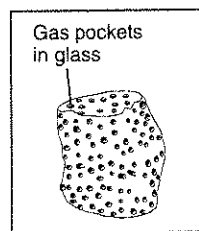
4. Which rock most probably formed directly from lava cooling quickly at Earth's surface?



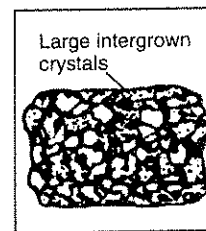
(1)



(2)



(3)



(4) 4 _____

5. Which characteristic provides the best evidence that obsidian rock formed in an extrusive environment?

- (1) layers of rounded fragments
- (2) distorted bands of large mineral crystals
- (3) noncrystalline glassy texture
- (4) mineral cement between grains

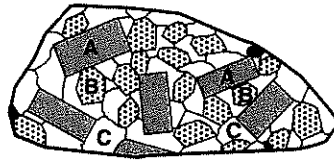
5 _____

6. For an igneous rock to be classified as rhyolite, it must be light colored, be fine grained, and contain



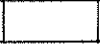
- (1) quartz
- (2) calcite
- (3) pyroxene
- (4) olivine

6 _____

Base your answers to questions 7 through 9 on the diagram and table below. The diagram represents a felsic igneous rock. Letters *A*, *B*, and *C* represent three different minerals in the rock sample. The table describes the physical properties of minerals *A*, *B*, and *C* found in the igneous rock sample.



(Actual size)

Mineral	Key	Physical Properties
<i>A</i>		pink, cleaves in two directions at 90°
<i>B</i>		white, cleaves in two directions, striations visible
<i>C</i>		colorless or clear with a glassy luster

7. State the texture of this igneous rock. _____

8. State *two* processes responsible for the formation of an igneous rock.

1) _____

2) _____

9. Using the Properties of Common Minerals chart (see page 164), give the name of:

Mineral *A* _____

Mineral *B* _____

Mineral *C* _____

Set 2 — Scheme for Igneous Rock Identification

10. The end product of the weathering of gabbro or basalt rocks is a solution of dissolved material that most likely would contain high amounts of

- (1) iron and magnesium
- (2) magnesium and potassium
- (3) aluminum and iron
- (4) aluminum and potassium

10 _____

11. An igneous rock is a dark-colored crystalline rock that formed when a lava flow cooled and solidified quickly on the surface of Earth. This igneous rock is classified as an

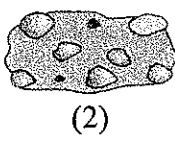
- (1) extrusive igneous rock with a coarse texture and felsic composition
- (2) extrusive igneous rock with a fine texture and a mafic composition
- (3) intrusive igneous rock with a coarse texture and a felsic composition
- (4) intrusive igneous rock with a fine texture and a mafic composition

11 _____

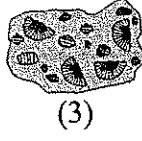
12. Which diagram best represents a sample of an igneous rock?



(1)



(2)



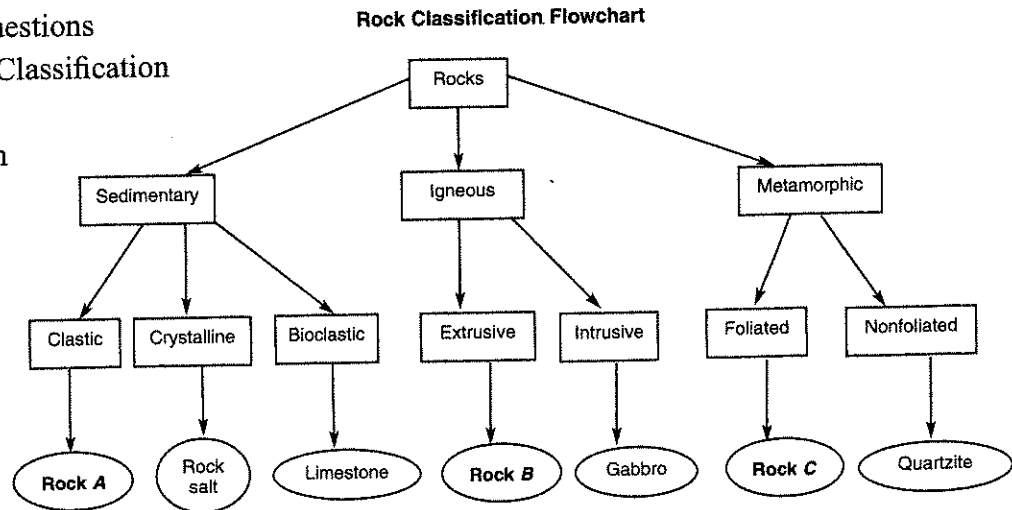
(3)



(4)

12 _____

Base your answers to questions 13 through 15 on the Rock Classification flowchart. Letters *A*, *B*, and *C* represent specific rocks in this classification scheme.



13. Rock *B* has a fine vesicular texture and is composed mainly of potassium feldspar and quartz. State the name of rock *B*.

14. Granite could be placed in the same position in the flowchart above as gabbro. Describe *two* differences between granite and gabbro.

- 1) _____
- 2) _____

15. Which rock letter could be scoria? _____