

# Rocks and Minerals C

Rank: \_\_\_\_\_

Points: \_\_\_\_\_

Science Olympiad North Regional  
Tournament at the University of Florida



Name(s): \_\_\_\_\_

Team Name: \_\_\_\_\_

School Name: \_\_\_\_\_

Team Number: \_\_\_\_\_

1. Do not open packet until told to do so.
2. Each station has a number and a page in the packet associated to it
3. Please make sure the specimens examined are placed in the same position as they were when arrived.
4. You have 50 minutes total; therefore 5 minutes for each of the 10 stations.

#### Station 1

1. Identify this specimen
2. What is the chemical formula
3. What element gives this mineral its color?
4. What is the crystal structure of this mineral?
5. What is the streak color of this mineral?

#### Station 2

1. Identify this specimen
2. What is the chemical formula?
3. To what class of minerals does this specimen belong to?
4. What best describes this specimen's cleavage?
5. What is the crystalline system of this specimen?

#### Station 3

1. Identify this specimen
2. Write the chemical formula
3. What is the fracture of this specimen?
4. What is the transparency of this specimen?

5. What is the historical significance of this mineral?
  - a. One of the first ores to produce solid oxygen
  - b. One of the first ores to produce copper
  - c. One of the first ores to derive water when dropped in HCl
  - d. One of the first ores to produce solid carbon

#### Station 4

1. Identify the specimen
2. Write the chemical formula
3. Of the following, which is considered the least helpful in identifying minerals?
  - a. Luster
  - b. Color
  - c. Chemical Formula
  - d. Cleavage
  - e. Streak
4. What is the hardness of the mineral?
5. What is this mineral used for?
  - a. Ore for Sulfur
  - b. Used with mud for oil well drilling
  - c. Souvenirs
  - d. Ore for most of the world's lead production

#### Station 5

1. Identify the specimen
2. How is this rock textured?
  - a. Granular
  - b. Foliated on mm scale
  - c. Foliated on cm scale
  - d. Aphanitic

3. What is the grain size on this rock?
4. True or false this rock would be good material for an aquifer because it is not very porous
5. Classify this specimen as Igneous, Metamorphic, or Sedimentary

#### Station 6

1. Identify this specimen
2. How is the rock formed?
3. Color of this rock?
  - a. Light Grey – Green
  - b. White – Light Grey
  - c. Black
  - d. Dark Grey – Black
4. What is the classification of the rock, Igneous, Metamorphic, Sedimentary.
5. Based on the previous question determine whether this rock can be classified on the Bowen's Reaction Series and what classification it would get.

#### Station 7

1. Identify this specimen
2. How is this rock textured?
  - a. Non-Clastic

- b. Granular
  - c. Clastic (Coarse-Grained)
  - d. Phaneritic
3. What is the usage of this rock?
  4. Classify this rock as Igneous, Sedimentary, Metamorphic
  5. Give at least one formation method of this rock

#### Station 8

1. Identify the specimen
2. Name at least 1 mineral that this rock encompasses
3. What is a use for this rock?
4. What is the grain size of this rock?
  - a. Medium Grained
  - b. Fine grained
  - c. Very-Fine grained – medium grained
  - d. Medium to coarse grained
5. What is the classification of this rock: Sedimentary, Metamorphic, Igneous

Station 9

Identify each specimen and describe its luster

(Be specific and use terms such as silky, vitreous, earthy, metallic)

Specimen 1 –

Specimen 2 –

Specimen 3 –

Specimen 4 –

Specimen 5 –

Specimen 6 –

Specimen 7 –

Specimen 8 –

Specimen 9 –

Specimen 10 –

Specimen 11 –

Specimen 12 -

Specimen 13 –

Specimen 14 –

Specimen 15 -

Station 10

Rank the following specimens in decreasing hardness from 1-6 (1 being the hardest, 6 being the softest). You will be given a penny.

Specimen 1

Specimen 2

Specimen 3

Specimen 4

Specimen 5

Specimen 6