

Rocks and Minerals B

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?
 - a. Copper
 - b. Oxygen
 - c. Sulfur
 - d. Hydrogen
 - e. Carbon

4. What is the crystal structure of this mineral?
 - a. Monoclinic
 - b. Orthorhombic
 - c. Triclinic
 - d. Trigonal

Station 3

1. Identify this specimen

2. Write the chemical formula

3. What is the fracture of this specimen?
 - a. Earthy Fracture
 - b. Conchoidal Fracture
 - c. Uneven Fracture
 - d. Hackly Fracture
 - e. Splintery Fracture

4. What is the transparency of this specimen?
 - a. Opaque
 - b. Translucent
 - c. Transparent
 - d. Transparent-Translucent
 - e. Translucent-Opaque

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 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?
 - a. Very fine grained
 - b. Fine to medium grained
 - c. Medium to Coarse grained
 - d. Coarse grained

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. Color of this rock?
 - a. Light Grey – Green
 - b. White – Light Grey
 - c. Black
 - d. Dark Grey – Black
3. What is the classification of the rock, Igneous, Metamorphic, Sedimentary.
4. Based on the previous question determine whether this rock can be classified on the Bowen's Reaction Series and what classification it would get. (Mafic or Felsic)

Station 7

1. Identify this specimen
2. How is this rock textured?
 - a. Non-Clastic
 - b. Granular
 - c. Clastic (Coarse-Grained)
 - d. Phaneritic
3. Classify this rock as Igneous, Sedimentary, Metamorphic
4. Which of the following is a way this rock can be formed?
 - a. Through hardened andesite lava
 - b. Through metamorphosis of mudstone/shale.
 - c. Through rounded gravel and boulder sized clasts cemented together in matrix
 - d. Through hydrothermal fluid fractures of a rock mass

Station 8

1. Identify the specimen
2. Which of the following is at least 1 mineral that this rock encompasses?
 - a. Galena
 - b. Quartz
 - c. Ulexite
 - d. Hematite
3. 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
4. What is the classification of this rock: Sedimentary, Metamorphic, Igneous

Station 9

Tiebreaker

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