Rocks and Minerals Test

Captains’ Tryouts 2017-2018

Blue Valley North HS
Instructions

• This test is intended to be printed and run as stations.
• There are 16 total stations.
  • Students may spend 3 minutes per station (= 48 total minutes) and 2 minutes at the end checking their work for any previous station.
• All questions are worth 1 point each unless otherwise stated
• Pictures are from Oklahoma University’s collection
1. Identify the sample.
2. Write the chemical formula.
3. It is most commonly used in...
   a. Toothpaste
   b. Pigment
   c. Ceramics
   d. Dimension stone
4. What is the SG? Explain how to find the SG of a specimen. (2 points)
Station 2

1. Identify the sample.
2. To what group does it belong?
3. Does the sample exhibit triboluminescence?
4. What is the cleavage? (multiple choice)
   a) Poor Octahedral
   b) Perfect Dodecahedral
   c) Good Prismatic
   d) Perfect Rhombohedral
5. Name another mineral that shares its crystal system.
Station 3

1. Identify the sample
2. Is it...
   a. Microcrystalline
   b. Fibrous
   c. Prismatic
   d. Crystalline
3. When grains of this mineral undergo metamorphism, they become what material?
4. This is the birthstone for what month?
Station 4

1. Identify this specimen
2. Name three major minerals that make up this rock. (3 points)
3. How is this specimen formed?
4. Which is not a use of this material
   a. Construction
   b. Fertilizer
   c. Flux
   d. Rip rap (crushed)
1. Identify the first specimen and give the chemical formula.
2. Identify the second specimen and give the chemical formula.
3. Of what two minerals can the second specimen be an ore? (2 points)
4. Which can be struck to produce a spark?
   a. First sample 
   b. Second sample 
   c. Neither sample 
5. Both are part of what group?
   a. Oxides 
   b. Silicates 
   c. Carbonates 
   d. Sulfides
Station 6

1. Identify the specimen.
2. This sample is...
   a. Orthoclase
   b. Plagioclase
   c. Carbonate
   d. Sulfate
3. It is most commonly used for...
   a. Fertilizer
   b. Scouring Powder
   c. Sodium ore
   d. Jewelry
4. Explain crystal twinning.
Station 7

1. Identify the first specimen
2. Identify the second specimen
3. What is not an environment either specimen would form in?
   a. Chemical sedimentary
   b. Replacement deposit
   c. Geothermal veins
   d. Caprock deposits
4. Is it soluble?
1. Identify the sample.
2. Name the main material.
3. For what is it NOT used?
   a. Ancient axe heads
   b. Abrasive
   c. Cement
   d. Rip rap
4. Where does it form?
Station 9

1. What is the first sample?
2. What is the second sample?
3. Of what month is the first sample a birthstone?
4. Explain how the second sample forms.
5. Both can be used in...
   a. Jewelry
   b. Cutting tools
   c. Ore of silica
   d. Ceramics
1. Identify the sample.
2. What is the hardness?
   a. 4
   b. 5
   c. 6
   d. 7
3. What property can this mineral show?
   a. Thermoluminescence
   b. Triboluminescence
   c. Piezoluminescence
   d. Crystalloluminescence
4. To what group does this mineral belong?
1. Identify the specimen.
2. What is the hardness?
   a. 1
   b. 2
   c. 2
   d. 3
3. What is the luster?
4. What is NOT a use of this material?
   a. Lubricant
   b. Cosmetics
   c. Fertilizer
   d. Ceramics
Station 12

1. Identify the specimen.
2. How is it formed?
3. Which compound would NOT dissolve it?
   a) HNO3
   b) H2SO4
   c) HCl
   d) NaOH
Station 13

1. Identify the specimen.
2. Explain the crystal structure. (2 points)
3. What is the fracture?
4. How is it used?
   a. Abrasive
   b. Bearings
   c. Drilling mud
   d. Cement
Station 14

1. Identify these specimens.
2. What type of twinning do they display?
3. Of what State is this the official mineral?
4. Write the chemical formula?
Station 15

1. Identify the specimen.
2. Name one major use.
3. What are the depressions that can form in its crystal faces called?
4. What is the crystal system?
5. What is the chemical formula?
1. Identify the white crystal.
2. Identify the cubic crystal.
3. Which one has a higher hardness (1 or 2)?
4. Is either one fluorescent?
5. What element do their chemical formula’s share?