STATION A (Olivine)

1. Identify this specimen

a. Quartzite

**b. Olivine**

c. Limestone

d. Dolomite

2. What is a common use for this specimen?

**a. Refractory Bricks**

b. High Capacity Roads

c. Landscaping

d. Floor tiles

3. What is the name of the gemstone variety of this specimen?

a. Emerald

b. Sapphire

**c. Peridot**

d. Malachite

4. Which of these is NOT a process of crystal formation?

a. evaporation from solution

b. precipitation from solution

c. solidification of a melt

**d. lithification of a melt**

5. What term is used to describe an inclusion of a mineral in a larger rock during its development and hardening?

a. Pluton

b. Dike

c. Batholith

**d. Xenolith**

STATION B (Aragonite)

6. Identify this specimen

a. **Aragonite**

b. Gypsum

c. Sphalerite

d. Celestite

7. This specimen shows pseudo-hexagonal forms due to repeated \_\_\_\_\_\_\_\_\_\_\_\_\_?

a. splitting

**b. twinning**

c. melting

d. refracting

8. Which crystal system does this mineral belong to?

**a. orthorhombic**

b. tetragonal

c. triclinic

d. isometric

9. In which environment is t this mineral commonly formed?

a. Arid

b. Mountain building

c. Lava plateau

**d. Marine**

10. To which family does this mineral belong?

a. Silicates

**b. Carbonates**

c. Oxides

d. Halides

STATION C (Bauxite)

11. Identify this specimen.

**a. Bauxite**

b. Staurolite

c. Breccia

d. Barite

12. This specimen is an ore of

a. Iron

b. Nickel

**c. Aluminum**

d. Lead

13. The round structures that cover the specimen are called

a. Vesicles

b. Garnets

**c. Pisolites**

d. Fissules

14. Which is not a physical property commonly used in the lab or field to identify minerals?

a. Color

b. Streak

c. Luster

**d. Diffraction**

15. The tendency of a mineral to break and produce smooth, curving shell-shaped surfaces is termed

a. Luster.

b. Fibrous fracture.

**c. Conchoidal fracture.**

d. Streak

**STATION D TRUE OR FALSE**

16. Mica peels apart in parallel sheets because the chemical bonds between sheets are weak and the chemical bonds within sheets are strong.

**a. True**

b. False

17. Color and cleavage are two very useful physical properties used to identify quartz.

a. True

**b. False**

18. Gold and copper can both be found as native metals.

**a. True**

b. False

19. Vesicles are pieces of country rock broken off by intruding magma.

a. True

**b. False**

20. Pyroclasts are igneous rocks formed of igneous debris blown out of a volcano.

**a. True**

b. False

21. Sedimentary rocks form only at or near Earth’s surface never at great depths.

**a. True**

b. False

22. The words “weather” and “erosion” are synonyms; they can be used interchangeably.

a. True

**b. False**

23. Schist may form from a variety of protoliths that contain atoms necessary to make mica.

**a. True**

b. False

24. The deeper an igneous intrusion, the slower it cools.

**a. True**

b. False

25. The different colors of quartz are caused by impurities.

**a. True**

b. False

STATION E (Rhodonite)

26. Identify this specimen

a. Rhyolite

b. Sandstone

c. Chert

**d. Rhodonite**

27. Which family does this specimen belong to?

**a. Silicates**

b. Borates

c. Sulfates

d. Carbonates

28. In which environment is t this mineral commonly formed?

a. Plutons

b. Placer deposits

c. Secondary replacement deposits

d. **Hydrothermal replacement deposits**

29. This specimen is the ore of what metal?

a. Zinc

b. Arsenic

c. Titanium

**d. Manganese**

30. What term is used to describe a mineral’s habit when it doesn’t form visible crystals?

a. Acicular

**b. Massive**

c. Botryoidal

d. Dendritic

STATION F (variety of Quartz)

31. To which family do these specimens belong?

a. Native elements

b. Oxides

**c. Silicates**

d. Carbonates

32. These specimens can often be found inside the cavities of igneous rocks known as

a. Vugs

**b. Geodes**

c. Plutons

d. Nodules

33. Which of these attributes are true for these specimens?

**a. Hardness of 7, brittle tenacity, and hexagonal crystal**

b. Hardness of 5, elastic tenacity, hexagonal crystal

c. Hardness of 7, brittle tenacity, cubic crystal

d. Hardness of 5, ductile tenacity, orthorhombic crystal

34. Which of the following is a common use of these specimens?

a. Industrial paints

b. Mechanical insulation

**c. Decorative- jewelry and home**

d. Computer electronics

35. Which of the following statements is FALSE?

a. Crystals have an orderly internal arrangement of atoms.

b. Crystals are found in all rocks.

**c. Crystals are formed by the process known as solid-state diffusion.**

d. Cyrstals display symmetry.

STATION G (Staurolite)

36. Which of the following is the environment of formation for this specimen?

a. volcanic igneous

b. chemical sedimentary

**c. regional metamorphic**

d. contact metamorphic

37. What is an index mineral?

**a. Minerals used in metamorphic rocks as indicators of pressure and temperature**.

b. Minerals used to measure age of land formations.

c. Minerals used to measure degree of crystallization in igneous rocks

d. Minerals used as indicators of volcanic activity.

38. This specimen is part of which family?

a. Oxides

**b. Silicates**

c. Sulfates

d. Hydroxides

39. Bowen’s reaction series

a. shows that minerals crystallize in a random order, with no pattern involved.

**b. allows a geologist to predict what minerals will be together in igneous rocks.**

c. is an attempt to explain the logic of formation of sedimentary rocks.

d. explains why some minerals are darker in color than others.

40. Which of the following statements is FALSE?

a. Mafic minerals cool at higher temperature than silicic minerals do.

b. Mafic minerals are those rich in iron and magnesium.

c. Mafic minerals would be at the top of the Bowen’s reaction series, crystallizing first out of the melt.

**d. Mafic minerals form rhyolite and granite.**

STATION H (Marble, Slate)

41. Identify Specimen AA

a. Gypsum selenite

b. Milky quartz

**c. Marble**

d. Limestone

42. Identify Specimen BB

a. Shale

b. Limestone

c. Phyllite

**d. Slate**

43. Which statement is correct?

**a. Both rocks are foliated.**

b. Both rocks are not foliated.

c. AA is foliated, BB is not foliated.

d. BB is foliated, AA is not foliated.

44. Both of these specimens are a product of what process?

a. Lithification

b. Cementation

**c. Metamorphism**

d. Crystallization

45. With intense heat and pressure, specimen BB will turn into

**a. Gneiss**

b. Marble

c. Shale

d. Quartzite

STATION I (Gypsums)

46. What is the common name of specimen AA?

**a. Desert Rose**

b. Stone Petals

c. Sandy Rose

d. Dusty Petals

47. What is the common name of specimen BB.

a. Clear Ice

b. Simple Prism

c. Icelandic Prism

**d. Iceland Spar**

48. Identify specimen CC

a. Halite

**b. Gypsum Selenite**

c. Quartz Crystal

d. Calcite

49. Identify specimen DD

**a. Gypsum Satin Spar**

b. Gypsum Aggregate

c. Rose Satin Spar

d. Fibrous Gypsum

50. How do these specimens form?

a. During the cooling of molten materials

**b. During the evaporation of liquids**

c. The cooling of liquids

d. At high temperatures and pressures new crystals may grow in solid materials

STATION J (Coquina, diatomite)

51. Identify specimen AA

**a. Coquina**

b. Conglomerate

c. Breccia

d. Oolitic Limestone

52. Identify specimen BB

a. Talc

**b. Diatomite**

c. Oolitic Limestone

d. Sandstone

53. What is the origin of both specimens?

**a. Remains of marine organisms**

b. Decayed plants

c. Freshwater detritus

d. Alluvial deposits

54. If specimen AA undergoes metamorphism, what rock will result?

a. Garnet Schist

**b. Marble**

c. Phyllite

d. Quartzite

55. What type of sedimentary rock are these?

**a. Biochemical sedimentary**

b. Clastic sedimentary

c. Chemical sedimentary

d. Organic sedimentary

STATION K (Fluorite)

56. Identify this specimen

a. Quartz Amethyst

b. Halite

c. Gypsum Selenite

**d. Fluorite**

57. What is NOT a common use of this specimen?

a. Ceramics

**b. Paints**

c. Optical lenses

d. Jewelry

58. What crystal system does this belong to?

a. Tetragonal

b. Hexagonal

**c. Isometric**

d. Triclinic

59. What is its chemical composition?

**a. CaF2**

b. Al203

c. ZnS

d. FeS2

60. Which of these is an attribute of this specimen?

a. It reacts to acid

**b. It glows when exposed to UV light**

c. It refracts light

d. It conducts electricty

STATION L (Pyrite)

61. The common name for this specimen is

**a. Fool’s Gold**

b. Copper Cubes

c. Gold Cubes

d. Fake gold

62. What family of minerals does this specimen belong to?

a. Oxides

**b. Sulfides**

c. Halides

d. Silicates

63. What metal is this specimen an ore of?

a. Lead

**b. Sulfur**

c. Iron

d. Titanium

64. What is the specific gravity of this specimen?

a. 2.6

b. 3.8

**c. 5.1**

d. 1.9

65. What is another word for specific gravity?

a. Weight

**b. Mass**

c. Dimension

d. Opacity

STATION M (Conglomerate)

66. Identify this specimen

a. Coquina

**b. Conglomerate**

c. Breccia

d. Sandstone

67. How is this specimen classified?

a. Organic

b. Inorganic

**c. Clastic**

d. Chemical

68. What is the depositional environment for this specimen?

a. Deep marine

**b. Rivers**

c. Beaches

d. Swamps

69. This rock can be composed mainly of which of the following?

**a. Gravel**

b. Boulders

c. Shells

d. Clay

70. Which of these statements is TRUE?

a. Igneous rocks are always crystalline.

**b. Sedimentary rocks may result from sediment deposition by wind or water.**

c. Most metamorphic rocks contain minerals.

d. Sedimentary rocks can never be crystalline in texture.

STATION N (Muscovite Mica, Biotite, Lepidolite)

71. These specimens are all

**a. Micas**

b. Schists

c. Limestones

d. Gypsums

72. These specimens have a hardness of

1. 7

b. 1

**c. 2.5**

d. 4

73. Which of these is NOT a usage for specimen AA

a. Window panes

b. Insulation

c. Lubricants

**d. Paints**

74. The cleavage of specimen BB is

**a. Perfect Basal**

b. Indistinct

c. 2- Dimensional

d. Octahedral

75. These minerals can be found in

a. Igneous rocks

b. Metamorphic rocks

c. Sedimentary rocks

**d. All of the above**

STATION O (Granite, Gneiss)

76. Identify specimen AA

a.Gneiss

**b.Granite**

c. Andesite

d. Travertine

77. Identify specimen BB

a. Phyllite

b.Granite

c. Diorite

**d.Gneiss**

78. What are the two main minerals found in specimen AA?

**a. Quartz and Feldspar**

b. Garnet and Copper

c. Fluorite and Quartz

d. Mica and Gypsum

79. Which statement is true about specimen BB?

**a. This specimen is a result of high grade metamorphism.**

b. This specimen is a result of intermediate grade metamorphism.

c. This specimen is a result of low grade metamorphism.

d. This specimen is igneous, not metamorphic.

80. The bands in specimen BB are

**a. mineral grains that have been aligned due to very intense heat and pressure.**

b. crystals that grew slowly as the rock formed.

c. sediments that sorted themselves according to grain size.

d. inclusions of mafic magma in igneous rock.

STATION P (Bituminous, Lignite, Anthracite coal)

81. Identify specimen AA.

a. Lignite coal

b. Basalt

**c. Bituminous coal**

d. Graphite

82. Identify specimen BB.

a. Shale

b. Bituminous coal

**c. Lignite coal**

d. Anthracite coal

83. Identify specimen CC.

a. Obsidian

b. Smoky Quartz

**c. Anthracite coal**

d. Bituminous coal

84. These specimens are what kind of rocks?

a. Biochemical sedimentary rocks

b. Chemical sedimentary rocks

c. Clastic sedimentary rocks

**d. Organic sedimentary rocks**

85. What is the correct order of formation of these specimens?

a. Bituminous coal, Lignite coal, Peat, Anthracite coal

**b. Peat, Lignite coal, Bituminous coal, Anthracite coal**

c. Anthracite coal, Lignite coal, Peat, Bituminous coal

d. Lignite coal, Anthracite coal, Bituminous coal, Peat

STATION Q (Corundum)

86. Identify this specimen.

a. Bauxite

b. Goethite

c. Staurolite

**d. Corundum**

87. This specimen exhibits what kind of crystal?

**a. Hexagonal**

b. Octahedral

c. Cubic

d. Tetrahedral

88. This specimen forms in what kind of environment?

**a. Forms inside igneous and metamorphic rocks**

b. Forms inside volcanoes

c. Forms inside regional metamorphic formations

d. Forms as a result of erosion and lithification

89. The best way to identify this specimen is

**a. Use the Moh’s test to determine hardness of 9**

b. Use UV light to verify fluorescence

c. Check for basal cleavage

d. Use a tile plate to check for greenish-black streak

90. The usage of this specimen include all of the following EXCEPT

a. extra fine abrasive paper

b. knife sharpening

c. jewelry using gem quality specimens

**d. building foundation construction**

STATION R (Sulfur, Copper)

91. Identify specimen AA.

a. Citrine Quartz

**b. Sulfur**

c. Gold

d. Fluorine

92. Identify specimen BB.

a. Pyrite

b. Gold

c. Galena

**d. Copper**

93. These specimens belong to the family

**a. Native elements**

b. Silicates

c. Sulfates

d. Borates

94. Uses of specimen BB do NOT include which of the following:

a. Plumbing

b. Cookware

c. Jewelry

**d. Cosmetics**

95. Uses of specimen AA do NOT include which of the following:

a. Matches

b. Gun Powder

**c. Medicine**

d. Rubber

STATION T Identify as many specimens as you can

96. Galena

97. Chert

98. Basalt

99. Shale

100. Hematite

101. Rhyolite

102. Malachite

103. Ulexite

104. Magnetite

105. Barite

106. Sodalite

107. Kaolinite

108. Talc

109. Jasper

110. Chert