

Unit 2 Exam

1. You are working with two unknown rock samples and need to determine their hardness. We know that Unknown A can scratch topaz, but it cannot scratch diamond, although diamond can scratch it. We also know that Unknown B can scratch gypsum. Quartz can scratch Unknown B, but Unknown B cannot scratch quartz. What is the hardness of Unknown A and Unknown B?

<u>Mohs</u> <u>Hardness</u>	<u>Mineral</u>
1	Talc
2	Gypsum
3	Calcite
4	Fluorite
5	Apatite
6	Feldspar
7	Quartz
8	Topaz
9	Corundum
10	Diamond

- ☐ 9, 6
- ☐ 9, 4
- ☐ 10, 7
- ☐ 3, 5

2. Underground coal fires are a problem associated with mining.

- ☐ True
 - ☒ False
-

3. A mining company is digging for nickel ores that result from cooling magma. Where would they most likely find them an

- ☐ Buried deep in the ground because as magma heats up, nonmetallic minerals sink to the bottom and accumulate int
 - ☐ Floating in Earth's oceans, because as magma heats up, nonmetallic minerals separate and precipitate.
 - ☐ On Earth's surface because as magma cools, metallic minerals rise to the surface and accumulate into ore deposits.
 - ☐ Buried deep in the ground because as magma cools, metallic minerals sink to the bottom and accumulate into ore d
-

4. The main difference between batholiths and stocks is that stocks are formed deeper in Earth's surface.

- ☐ True
 - ☐ False
-

5. If you put an egg on a sidewalk on a hot day in July and try to cook it, you are using _____.

- ☐ active solar energy
 - ☐ geothermal energy
 - ☐ biomass
 - ☐ passive solar energy
-

6. At the most recent Mineralogical Society meeting, a member shows off her latest find! It is a non-silicate and a native el following CANNOT be this mineral and what would be the correct reason why not?

- ☐ Au – Native elements cannot be minerals such as gold and silver.
 - ☐ PbS - Native elements always contain silicon.
 - ☐ NaCl – Native elements are not combined with other elements.
 - ☐ SiO - Native elements are not combined with other elements.
-

7. We use crude oil for all sorts of products, including medicines and clothing.

- ☐ True
 - ☐ False
-

8. The U.S. uses more renewable resources than nonrenewable resources.

- ☐ True
 - ☐ False
-

9. If you were the owner of a natural gas company, what type of rock would be ideal to look for if you wanted to find an imp reservoir?

- ☐ Shale
 - ☐ Sandstone
 - ☐ Limestone
 - ☐ Pumice
-

10. The main disadvantage to using nuclear power is

- ☐ The highly radioactive byproducts
 - ☐ Air pollution
 - ☐ Noise
 - ☐ Cost
-

11. If you try hard enough, you can change physical properties.

- ☐ True
 - ☐ False
-

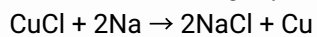
12. Water (H₂O) is considered a mineral because it is inorganic and occurs naturally.

- ☐ True
 - ☐ False
-

13. You give your mother a pendant for her birthday. This pendant is a mineral that looks like a cat's eye. This mineral has 1 asterism.

- ☐ True
 - ☐ False
-

14. In the following equation, which compound is a reactant?



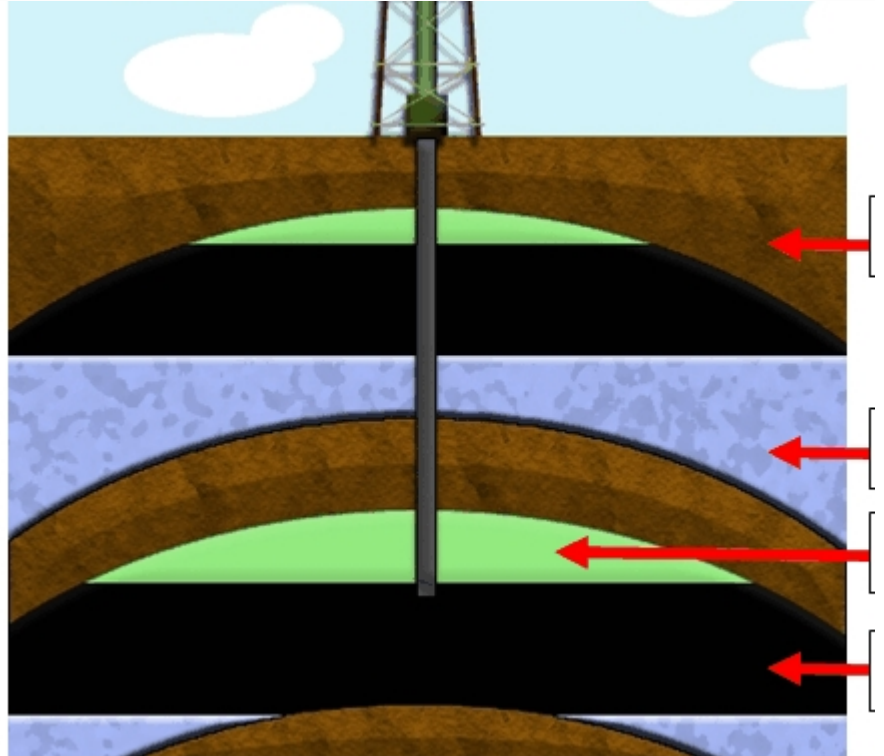
- ☐ Cu
 - ☐ 2NaCl
 - ☐ 2Na
 - ☐ CuCl
-

15. How are nodules similar to gemstones?

- ☐ They are both valuable.
- ☐ They are both formed from metals.
- ☐ They are both easy to mine.
- ☐ They are both found on the ocean floor.

16.

What does C represent in the diagram?



- ☐ Oil
- ☐ Water
- ☐ Shale
- ☐ Natural gas

17. Over thousands of years, when sediment is squeezed together and the pore space between the grains is reduced, this _____.

- ☐ metamorphic
- ☐ cementation
- ☐ sedimentary
- ☐ compaction

18. Which of the following is NOT an immediate effect on the environment due to fossil fuel use?

- ☐ erosion
 - ☐ High costs
 - ☐ acid rain
 - ☐ water pollution
-

19. The following equation is balanced correctly. $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$

- ☐ True
 - ☐ False
-

20. Put the igneous rocks in order from least silica content to greatest silica content.

- ☐ Mafic $\rightarrow$ felsic $\rightarrow$ intermediate
 - ☐ Felsic $\rightarrow$ intermediate $\rightarrow$ mafic
 - ☐ Mafic $\rightarrow$ intermediate $\rightarrow$ felsic
 - ☐ Intermediate $\rightarrow$ mafic $\rightarrow$ felsic
-

21. Which mineral is a non-silicate sulfide?

- ☐ CdS
 - ☐ FeSO
 - ☐ SoS
 - ☐ Au
-

22.



This picture depicts what kind of rock?

- ☐ Nonfoliated igneous rock
- ☐ Foliated sedimentary rock
- ☐ Foliated metamorphic rock
- ☐ Nonfoliated metamorphic rock

23. ANALOGY: Olivine is to isolated tetrahedra as quartz is to framework silicate

- ☐ True
- ☐ False

24. Quartz is a rock-forming mineral.

- ☐ True
- ☐ False

25. The following equation is balanced correctly: $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$

- ☐ True
- ☐ False

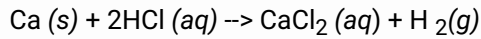
26. Vesicles are caused by magma containing a large amount of dissolved gases and cooling very rapidly.

- ☐ True
 - ☐ False
-

27. What can we do to make sure that gasoline engine cars currently on the road are less harmful on the environment?

- ☐ Having the factories make more energy efficient engines
- ☐ Install larger mufflers on your car
- ☐ There is nothing we can do.
- ☐ Emissions testing

28. When the following equation is balanced, what is the coefficient for CaCl_2 ?



- ☐ 2
- ☐ 1
- ☐ 3
- ☐ 6

29. You are given a mineral and you need to determine its identity. Which of the following will NOT be an ideal property to use for a mineral?

- ☐ Density
- ☐ Melting point
- ☐ Crystal shape
- ☐ Fracture

30. The following equation is balanced. $\text{CS} + 2\text{Cl} \rightarrow 2\text{CCl} + \text{SCl}$

- ☐ True
- ☐ False

31. When ancient, decaying bones and organisms become compressed together, what type of sedimentary rock would form?

- ☐ Clastic
 - ☐ Compaction
 - ☐ Organic
 - ☐ Chemical
-

32. Which of the following is NOT a major category of rock?

- ☐ Igneous
 - ☐ Magma
 - ☐ Sedimentary
 - ☐ Metamorphic
-

33. What is the main difference between fluorescence and phosphorescence?

- ☐ There is no difference.
 - ☐ A fluorescent mineral will continue to glow after UV is no longer shining on it.
 - ☐ Only phosphorescent minerals glow under UV light.
 - ☐ A phosphorescent mineral will continue to glow after UV is no longer shining on it.
-

34. Which of the following is NOT an example of a biomass material used to produce energy?

- ☐ decomposing organic matter
 - ☐ wood scraps
 - ☐ animal waste
 - ☐ styrofoam
-

35. ANALOGY: Vesicular is to trapped bubbles as coarse-grained is to large mineral particles.

- ☐ True
 - ☐ False
-

36. Which of the following statements is true about wind energy?

- ☐ Cow farms help produce wind energy for larger areas, such as whole communities.
 - ☐ Wind energy is not a sufficient resource and should never be used to generate any type of energy.
 - ☐ Wind energy can be used to create electricity.
 - ☐ Wind energy can be converted into a usable form of chemical energy.
-

37. ANALOGY: Evaporates are to chemical sedimentary as dead fish are to clastic sedimentary.

- ☐ True
- ☐ False

38. It is your turn to host your monthly "Scientists Are Awesome Club" dinner, and the theme of the dinner is mixtures. You both homogenous and heterogeneous mixtures are present. What do you plan on serving?

- ☐ Vegetable soup and vanilla pudding
- ☐ Beef stew and tapioca pudding
- ☐ Vegetable soup and rice pudding
- ☐ Chicken broth and Jell-O

39. Which of the following is NOT a physical property?

- ☐ Water boiling at 100°C.
- ☐ Sodium exploding when mixed with water.
- ☐ A piece of styrofoam floating on water because it is less dense.
- ☐ A mineral causing a white streak on another mineral.

40. The Endangered Species Act has federal laws that relate to mining.

- ☐ True
- ☐ False

41. While on a mission to Mars, you discover a certain substance that is native to the planet, not made up of dead organisms. When you radio back to NASA headquarters, what would be the most accurate description you could give this substance?

- ☐ Rock
- ☐ Moon rock
- ☐ Soil
- ☐ Mineral

42. Uranium is a nonrenewable fossil fuel.

- ☐ True
 - ☐ False
-

43. An ion with a charge of +3 would most likely be an element in Group ____.

- ☐ 13
 - ☐ 18
 - ☐ 1
 - ☐ 16
-

44. Which of the following subatomic particles and their charges is correct?

- ☐ Proton – positive; electron – neutral
 - ☐ Neutron – neutral; proton – neutral
 - ☐ Electron – positive; proton – positive
 - ☐ Neutron – neutral; electron – negative
-

45. The main reason petroleum cannot be a mineral is because it is man-made.

- ☐ True
 - ☐ False
-

46. Which type of coal releases the most amount of energy and heat when burned?

- ☐ Peat
 - ☐ Anthracite
 - ☐ Bituminous
 - ☐ Lignite
-

47. Even though nodules are rich in minerals, sometimes we do not mine them.

- ☐ True
- ☐ False