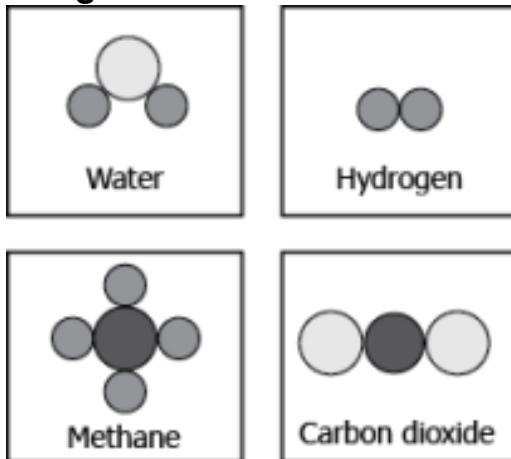


Name:
Class:
Date:

Question #1

The image shows the atomic arrangements of four different substances.

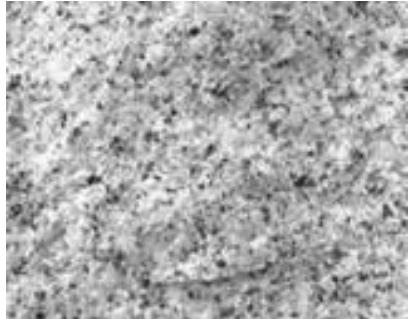


Which are compounds and why?

- A) hydrogen because it contains only one kind of atom
- B) methane because it contains the maximum number of molecules
- C) water and carbon dioxide because each contains a similar number of molecules
- D) water, carbon dioxide, and methane because each contains more than one element

Question #2

Granite forms when magma cools slowly, deep underground, into large crystals composed of the minerals quartz, feldspar, and mica.

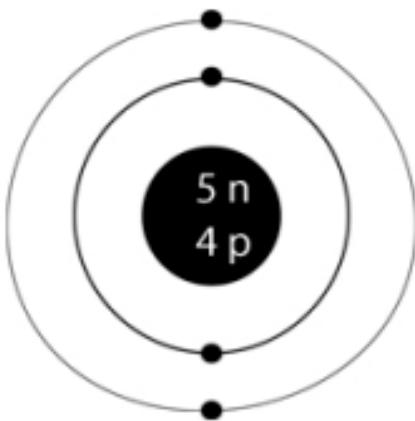


How would granite be classified?

- A) compound
- B) heterogeneous mixture
- C) homogeneous mixture
- D) solution

Question #3

Matter can be classified in different ways.

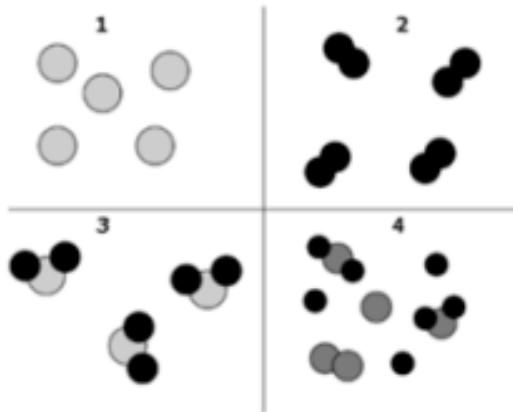


What kind of matter is illustrated?

- A) cell
- B) compound
- C) element
- D) mixture

Question #4

Each ball shown in the diagram represents a type of atom. Balls of the same shade and size represent the same kind of atom.



Which diagram shows a mixture?

- A) 1
- B) 2
- C) 3
- D) 4

Question #5

Which statement is true about the organization of matter?

- A) Atoms can be broken down into particles called elements and compounds.
- B) Atoms make up elements that can chemically combine to form compounds.
- C) Compounds are composed of elements that chemically combine to form atoms.
- D) Elements are composed of compounds that chemically combine to form atoms.

Question #6

Adam analyses a sample of a substance. He concludes that it consists of more than one type of atom chemically combined. What does the substance represent?

- A) an element
- B) a compound
- C) a heterogeneous mixture
- D) a homogeneous mixture

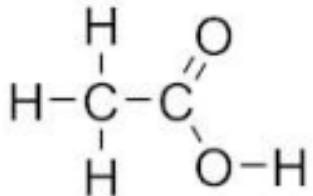
Question #7

Water, a stable liquid, is formed when two flammable gases, hydrogen and oxygen, combine. What has happened?

- A) An atom has been created.
- B) A compound has been created.
- C) A mixture has been created.
- D) An element has been created.

Question #8

Matter can be classified in different ways.



What kind of matter is illustrated?

- A) cell
- B) compound
- C) element
- D) mixture

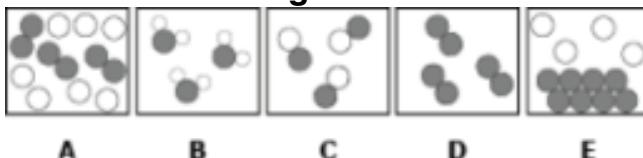
Question #9

Potassium iodide can be decomposed by electrolysis (an electric current) into the elements potassium and iodine. Based on this information, how would potassium iodide be classified?

- A) compound
- B) heterogeneous mixture
- C) homogeneous mixture
- D) solution

Question #10

The image below shows various atom arrangements.



Which arrangements represent a mixture?

- A) A and B
- B) A and E
- C) C and D
- D) A, C, and D

Question #11

The work of many scientists has contributed to the periodic table that is used today. What is the basis for the organization of the elements in the table?

- A) They are arranged in no specific order because scientists could not agree.
- B) They are arranged according to increasing atomic weight.
- C) They are arranged according to increasing atomic number.
- D) They are arranged in the order in which they were discovered from first to most recent.

Question #12

How many hydrogen atoms must bind to an oxygen atom to form a water molecule?

- A) 1
- B) 2
- C) 3
- D) 4

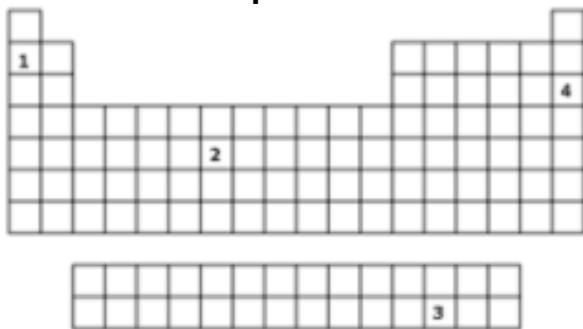
Question #13

Which element would be able to conduct electricity in its solid state?

- A) chlorine
- B) copper
- C) iodine
- D) sulfur

Question #14

Use the blank periodic table to answer the question.



Which word would *best* describe the element in the box numbered "2"?

- A) brittle
- B) gas
- C) malleable
- D) semiconductor

Question #15

Examine the section of the periodic table.

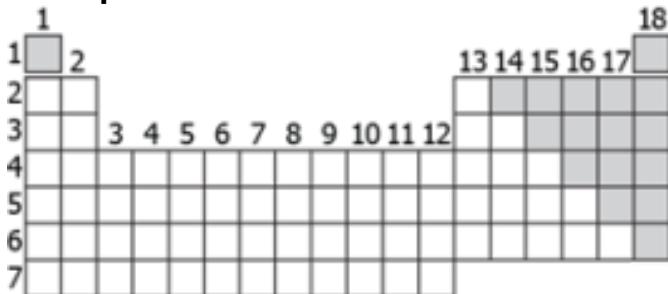
13 boron B	14 carbon C	15 nitrogen N	16 oxygen O	17 fluorine F
aluminum Al	silicon Si	phosphorus P	sulfur S	chlorine Cl
gallium Ga	germanium Ge	arsenic As	selenium Se	bromine Br
indium In	tin Sn	antimony Sb	tellurium Te	iodine I
thallium Tl	lead Pb	bismuth Bi	polonium Po	astatine At

What do carbon, phosphorus, and selenium have in common?

- A) They are metals.
- B) They are nonmetals.
- C) They are in the same period.
- D) They are in the same family.

Question #16

Analyze the basic layout of the periodic table.



What does the shaded area represent?

- A) metalloids
- B) metals
- C) nonmetals
- D) transition metals

Question #17

The diagram shows a cup of hot coffee with a metal spoon.

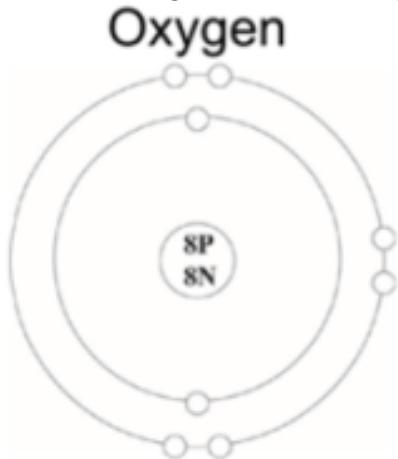


Which physical property explains why the spoon becomes hot?

- A) conductivity
- B) ductility
- C) luster
- D) malleability

Question #18

This is a diagram of an oxygen atom.



What is the atomic number of oxygen?

- A) 0
- B) 8
- C) 16
- D) 24

Question #19

Which statement about the periodic table is true?

- A) Elements in the same column share similar properties.
- B) Elements in the same row share similar properties.
- C) Elements on the left have a larger nucleus than elements on the right.
- D) Elements at the top of each column have the highest atomic mass in that column.

Question #20

Referring to the reference periodic table, what do the elements fluorine, chlorine, and bromine have in common?

- A) All are located in the same period.
- B) All have metallic properties.
- C) All are halogens, so they are not very chemically active.
- D) All have the same number of valence electrons.

Question #21

Refer to the periodic table.

1	H	Hydrogen 1.00797	2	He	Helium 4.0026
1	Li	Lithium 6.939	4	Be	Beryllium 9.0122
2	Na	Sodium 22.9897	11	Mg	Magnesium 24.312
3	K	Potassium 39.102	20	Ca	Calcium 40.08
4	Rb	Rubidium 85.47	38	Sc	Scandium 44.956
5	Cs	Cesium 132.905	39	Ti	Titanium 47.86
6	Fr	Franium (223)	40	V	Vanadium 50.944
7	87	Ra	41	Cr	Chromium 51.996
	88	Ac	42	Mn	Manganese 54.9380
	89	Rf	43	Fe	Iron 55.847
	104	Db	44	Co	Cobalt 58.932
	105	Seaborgium (250)	45	Ni	Nickel 58.71
	106	Sg	46	Cu	Copper 63.546
	107	Bh	47	Zn	Zinc 65.37
	108	Hs	48	Ga	Gallium 69.72
	109	Mt	49	Ge	Germanium 72.50
	110	Uun	50	As	Antimony 74.916
	111	Uuu	51	Se	Selenium 78.964
	112	Uub	52	Br	Bromine 79.904
	113	Uut	53	I	Iodine 126.90447
	114	Uug	54	Xe	Xenon 131.30
	115	Up	55	Te	Tellurium 127.60
	116	Uuh	56	Po	Polonium (210)
	117	Uuo	57	At	Astatine (223)
	118		58	Rn	Radon (222)
			59	Yb	Lutetium 174.97
			60	Pr	
			61	Nd	
			62	Pm	
			63	Sm	
			64	Eu	
			65	Gd	
			66	Tb	
			67	Dy	
			68	Ho	
			69	Er	
			70	Tm	
			71	Lu	
		Lanthanide Series	58	Ce	Cerium 140.12
			59	Pr	Praseodymium 140.907
			60	Nd	Neodymium 144.24
			61	Pm	Promethium (145)
			62	Sm	Samarium 150.38
			63	Eu	Europium 151.96
			64	Gd	Gadolinium 157.25
			65	Tb	Terbium 158.824
			66	Dy	Dysprosium 162.50
			67	Ho	Holmium 164.930
			68	Er	Erbium 167.26
			69	Tm	Thulium 168.934
			70	Yb	Ytterbium 173.04
		Actinide Series	90	Th	Thorium 232.036
			91	Pa	Protactinium (231)
			92	U	Uranium 238.03
			93	Np	Neptunium (237)
			94	Pu	Plutonium (242)
			95	Am	Americium (243)
			96	Cm	Curium (247)
			97	Bk	Berkelium (247)
			98	Cf	Californium (251)
			99	Es	Einsteinium (254)
			100	Fm	Fermium (257)
			101	Md	Mendelevium (258)
			102	No	Nobelium (258)
			103	Lr	Lawrencium (258)

Copper is commonly used in electrical wiring. What characteristic of copper makes it perfect for this use?

- A) Copper is a shiny metal allowing it to reflect light which is important when used in electrical wiring.
- B) Copper is a metal that is highly conductive allowing electricity to move easily through it.
- C) Copper is a nonmetal that is nonconductive making it unlikely that one would receive an electrical shock.
- D) Copper is a brittle nonmetal that is perfect when surrounded by the external wrap.

Question #22

Which scenario describes a physical change?

- A) The bright blue color of a concentrated copper (II) sulfate solution fades as it is diluted by the addition of water.
- B) When a solid copper penny and a solution of nitric acid are mixed, a reddish-orange gas is produced.
- C) When hydrochloric acid is poured over white pellets of sodium hydroxide, the pellets dissolve, and the solution is warm to the touch.
- D) When two clear solutions of lead (II) acetate and potassium iodide are mixed in a test tube, a bright yellow precipitate forms.

Question #23

What property of copper makes it ideal to create thin sheets of copper?

- A) density
- B) magnetism
- C) malleability
- D) solubility

Question #24

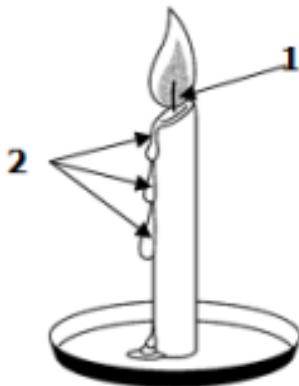
When houses were built 50-75 years ago, a commonly used cover for the outside of the house was aluminum siding. Today, vinyl siding is much more popular.

Why is vinyl siding used more today than aluminum?

- A) Vinyl siding is more magnetic than aluminum siding.
- B) Vinyl siding does not rust or corrode like aluminum siding.
- C) Vinyl siding conducts electricity better than aluminum siding.
- D) Vinyl siding is composed of a more dense metal than aluminum siding.

Question #25

The diagram identifies two changes in matter that occur to a candle as it burns.



Which statement about the changes in the candle is true?

- A) 1 is a physical change, and 2 is a chemical change.
- B) 1 and 2 are physical changes.
- C) 1 is a chemical change, and 2 is a physical change.
- D) 1 and 2 are chemical changes.

Question #26

The rusting of steel wool occurs when the iron in the steel wool combines with what substance?

- A) carbon dioxide
- B) hydrogen
- C) nitrogen
- D) oxygen

Question #27

The picture shows a piece of crumpled paper.



How have the properties of the paper changed?

- A) Chemical properties have changed because of a change in density.
- B) Chemical properties have changed because of a change in volume.
- C) Physical properties have changed because of a change in energy.
- D) Physical properties have changed because of a change in shape.

Question #28

Which statement is an example of a chemical change?

- A) A liquid substance is heated until it evaporates.
- B) A precipitate forms when two solutions are mixed.
- C) A substance is polished until it has a smooth surface.
- D) A solid is separated from the liquid part of a mixture by filtration.

Question #29

Which example indicates a chemical reaction occurred?

- A) wax melted
- B) nails rusted
- C) sugar dissolved
- D) water boiled