

Atomic Theory Review

Name:

Date:

Block:

Key

1. What is an element?

a pure substance, the same throughout. (found on periodic table)

2. Classify the following as an element, compound or mixture:

Fluorine element

CO₂ compound

Sandwich mixture

Water compound

Coffee mixture

Computer mixture

3. What is the lightest element?

Hydrogen

4. Which family is the following element a part of?

Radium alkaline earth metals

I Halogen

Sodium alkali metal

Xenon Noble gas

Mg alkaline earth metals

Nickel transition metal

Neon Noble gas

Ba Alkaline earth metal

5. What is an atom?

all matter is made up of atoms. Atoms contain protons, neutrons, electrons.

6. Give three examples of elements in substances or objects that you use:

- i. Helium gas (balloons)
- ii. Oxygen gas (air we breathe)
- iii. H₂O (water)

7. What is the Periodic Table?

organization of the elements

8. What is one property/characteristic of alkali metals?

highly reactive! (never found by itself)

9. Define a subatomic particle:

Protons — positive
 Neutrons — neutral
 Electrons — negative

10. What does the atomic number represent?

of protons

11. What does the atomic mass measure?

of protons + # of neutrons

12. Complete the following table:

Subatomic Particle	Charge	Location in the atom	Mass
protons	+1	nucleus	1 amu
neutrons	0	nucleus	1 amu
electrons	-1	shells	0 amu

13. Determine the subatomic particle(s) described by the following statements:

- Has an electric charge *protons, electrons*
- Has the heaviest mass *protons, neutrons*
- Does not have an electric charge *neutrons*
- Has the lightest mass *electrons*
- Is found in the nucleus *protons, neutrons*
- Has equal masses *protons, neutrons*
- Gives the nucleus a positive charge *protons*
- Is found in shells that surround the nucleus *electrons*
- Have equal quantities in all **neutral** atoms *protons, electrons*

14. Why does the nucleus of an atom have a positive charge?

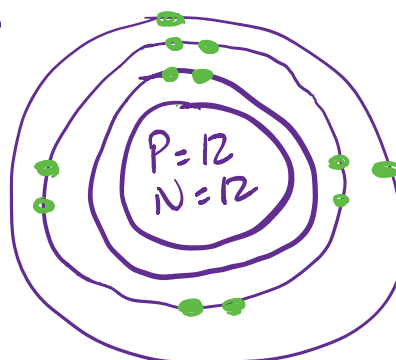
there are both positive protons and neutral neutrons in the nucleus making the overall charge to be positive

15. Where is most of the volume found in the atom? Explain with your answer with a diagram.

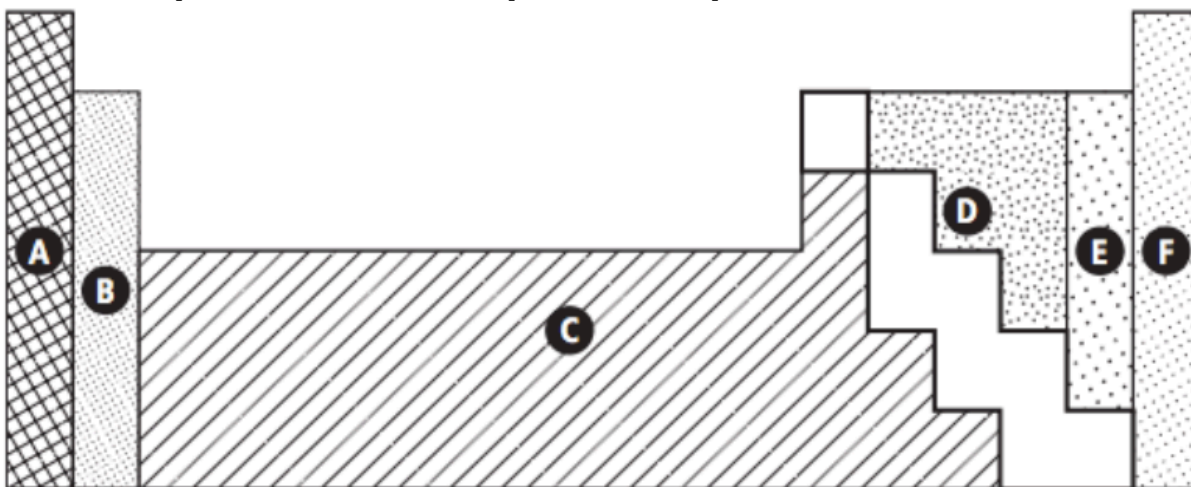
Volume = amount of space

Volume is found in the electron shells as the # of electrons increases the volume of the shell increases

Mg



16. Use the periodic table below to help answer these questions:



- a. Helium: F
- b. Nitrogen: D
- c. Vanadium: C
- d. Palladium: C
- e. Noble gases: F
- f. Magnesium: B
- g. Most reactive: A
- h. Least reactive: F
- i. Halogens: E
- j. Transition metals: C

17. Complete the following table:

Element Name	Element Symbol	Atomic Number	Atomic Mass	# of protons	# of neutrons	# of electrons
Titanium	Ti	22	48	22	26	22
Bromine	Br	35	80	35	45	35
Gold	Au	79	197	79	118	79
Bismuth	Bi	83	209	83	126	83
Oxygen	O	8	16	8	8	8

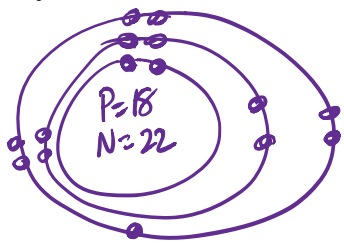
18. What does a Bohr model represent?

The location of the subatomic particles in an atom

19. In a Bohr Diagram, how many electrons are in the innermost shell?

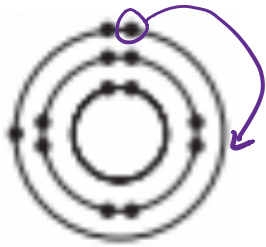
2

20. How many electrons are in each shell of a Bohr Diagram of Ar?



2, 8, 8

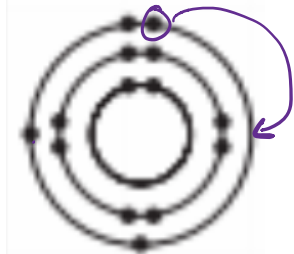
21. Identify the element represented by the following Bohr Diagram:



Element: *Aluminum*



Element: *Fluorine*



Element: *Silicon*



Element: *Neon*

22. Draw the Bohr diagram for the following elements:

<p>Lithium</p>	<p>Neon</p>	<p>Calcium</p>
<p>Chlorine</p>	<p>Argon</p>	<p>Sulfur</p>