

EXAM: Atomic Models & Periodic Table

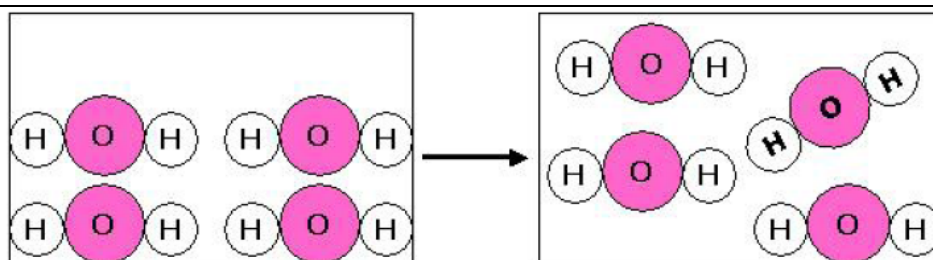
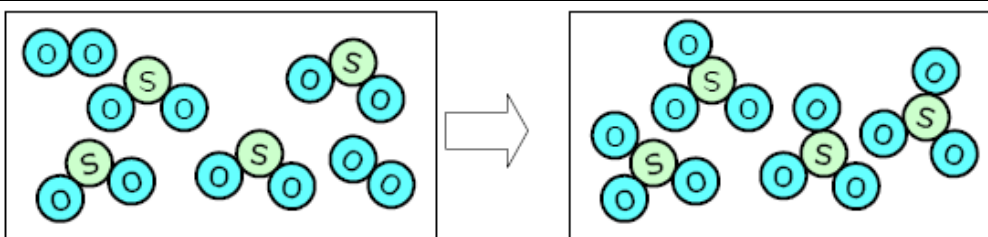
Name: _____

Group: _____

1. a) Fill in the following table [1 POINT]
 b) Which ones are isotopes? Why? [0.5 POINTS]
 c) Draw a "C" atom, showing all its particles (protons, electrons, neutrons) and according to Bohr's model of the atom [0.5 POINTS]
 To write Lewis notation you can use real symbols or the ones provided here (they are not the real symbols)

	Atomic number (Z)	Mass number (A)	# of protons	# of neutrons	# of electrons	Lewis notation
A²⁻	8	17				
B	15			16		
C				8	6	
D⁺				12	10	
E	6	12				

2. a) Classify the matter in each of the following cases [0.5 POINTS]
 b) Determine if the change is physical or chemical [0.5 POINTS]
 c) Describe each change showing the formulas and physical state of each substance [0.5 POINTS]



(No fixed shape)

3. The electrons of a group of hydrogen atoms have been excited and are all found at $n=4$ level.

a) Build an energy diagram in which the energy levels (from $n=1$ to $n=4$) and the origin of energies (energy=0) are shown. Specify in that diagram all the possible jumps downwards. [0.5 POINTS]

b) Draw the spectral lines that correspond to all possible jumps downwards from $n=4$ [1 POINT]

4. Taking into account the periodic table shown here, answer the following questions:

Q						
			J		Z	
					D	
		N		R	V	L
M	T					

1. the element with the highest electronegativity
2. indicate alkaline elements shown in this table
3. the element with this electron configuration: $1s^2 2s^2 2p^6 3s^2$
4. order the elements R, D, M, V, N in the increasing order of ionization energy
5. write the electron configuration of Z using the orbital diagram (boxes)
6. indicate the non-metallic elements
7. show the elements in which the atom has only one unpaired electron
8. indicate the halogens specified here
9. order the elements N, J, T, Z in the increasing order of size
10. show the element with $Z^* = 3$
11. show the elements with two unpaired electrons
12. indicate the metals
13. indicate the elements that will form cations
14. indicate the elements with three electrons unpaired
15. indicate the elements with three electronic levels
16. indicate the elements with two electrons in their last electronic level
17. indicate the noble gases
18. indicate the elements with this electron configuration in their last level: $s^2 p^2$
19. place the following elements in their positions in the periodic table:
X: $1s^2 2s^2 2p^6 3s^2 3p^1$ Y: $1s^2 2s^2 2p^6$
20. fill in the table with the real symbols

5 POINTS.

The letters shown in the periodic table are not the real symbols.