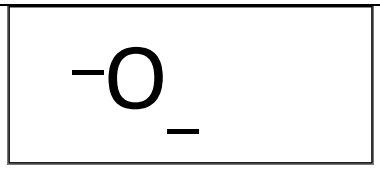
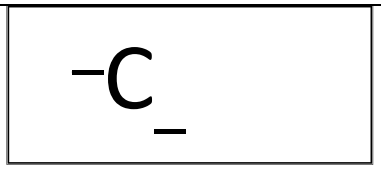
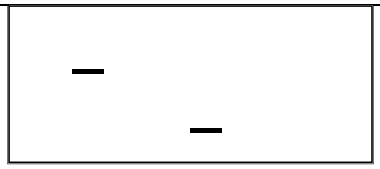
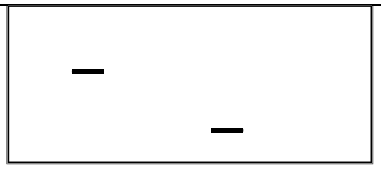
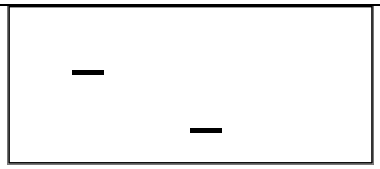
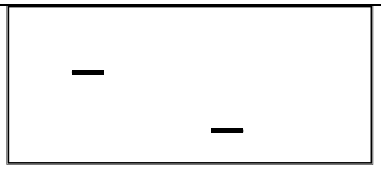
Name_____ **Date**_____

SUBATOMIC PARTICLES

Using the periodic table, fill in the missing information for all the elements below:

$^{1}_{}H_{1}$ Name: Hydrogen Atomic Number: 1 Atomic mass number: 1 Number of protons (p^+): 1 p^+ Number of electrons(e^-): 1 e^- Number of neutrons(n^0): 1 – 1 = 0 n^0	$^{17}_{}Cl_{35}$ Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____
$^{2}_{}He_{4}$ Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____	$^{10}_{}Ne_{20}$ Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____
$^{-}S_{-}$ Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____	$^{-}Al_{-}$ Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____

 Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____	 Name: _____ Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____
 Name: **Magnesium** Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____	 Name: **Fluorine** Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____
 Name: **Argon** Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____	 Name: **Lithium** Atomic Number: _____ Atomic mass number: _____ Number of protons (p^+): _____ Number of electrons(e^-): _____ Number of neutrons(n^0): _____

Name_____ **Date**_____

The Rutherford- Bohr Atomic Model

Using the periodic table, fill in the missing information for all the elements below:

Mark _____ / 108

Element (0.5p)	**Atomic #** (0.5p)	**Atomic mass #** (0.5p)	**# of protons** (0.5p)	**# of electrons** (0.5p)	**Rutherford - Bohr diagram** (2 p)	**# of valence electrons** (1 p)
Hydrogen Symbol:						
Helium Symbol:						
Lithium Symbol:						
Beryllium Symbol:						
Boron Symbol:						

Element (0.5p)	**Atomic #** (0.5p)	**Atomic mass #** (0.5p)	**# of protons** (0.5p)	**# of electrons** (0.5p)	**Rutherford - Bohr diagram** (2 p)	**# of valence electrons** (1 p)
Carbon Symbol:						
Nitrogen Symbol:						
Oxygen Symbol:						
Fluorine Symbol:						
Neon Symbol:						

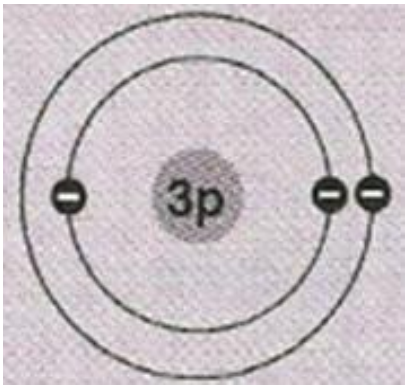
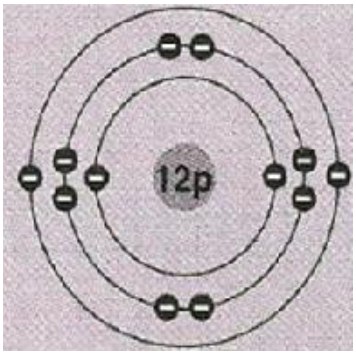
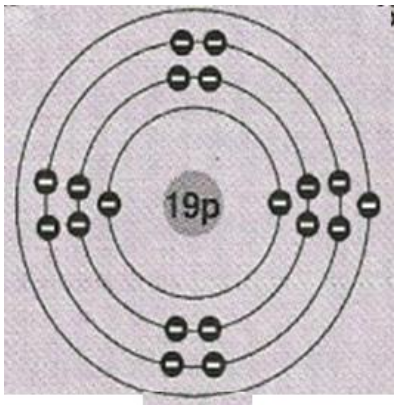
Element (0.5p)	**Atomic #** (0.5p)	**Atomic mass #** (0.5p)	**# of protons** (0.5p)	**# of electrons** (0.5p)	**Rutherford - Bohr diagram** (2 p)	**# of valence electrons** (1 p)
Sodium Symbol:						
Magnesium Symbol:						
Aluminum Symbol:						
Silicon Symbol:						
Phosphorus Symbol:						

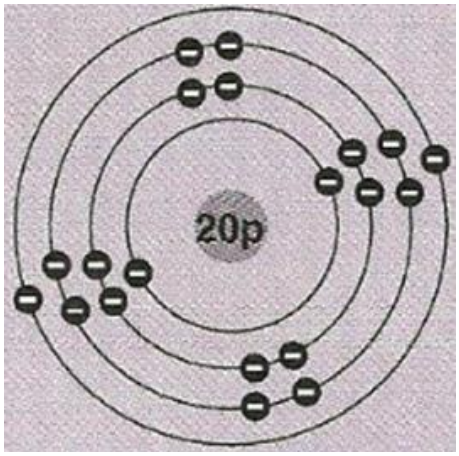
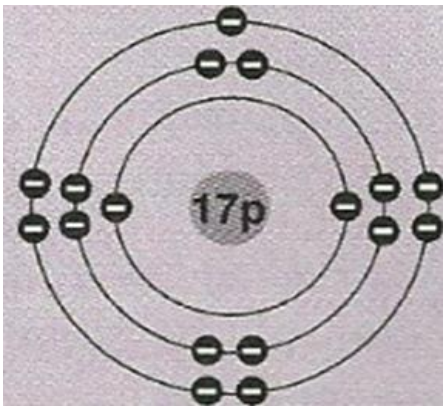
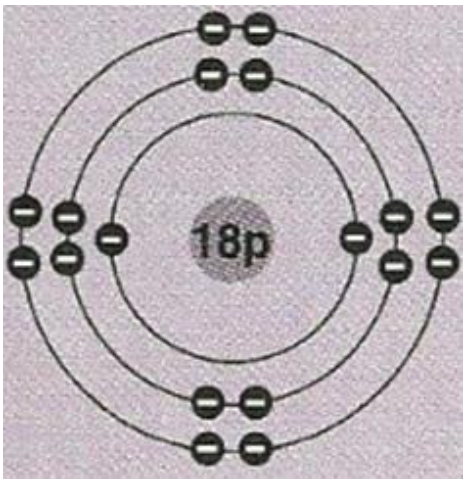
Element (0.5p)	**Atomic #** (0.5p)	**Atomic mass #** (0.5p)	**# of protons** (0.5p)	**# of electrons** (0.5p)	**Rutherford - Bohr diagram** (2 p)	**# of valence electrons** (1 p)
Sulphur Symbol:						
Chlorine Symbol:						
Argon Symbol:						

Name_____ **Date**_____

GROUPS AND PERIODS – practice 1

Fill in the missing information for all the elements below:

	Name of element: _____ Electron configuration: ____ Number of shells: ____ Number of valence electrons: ____ Period number: ____ Group number: ____ *Mark* _____ / 3
	Name of element: _____ Electron configuration: ____ Number of shells: ____ Number of valence electrons: ____ Period number: ____ Group number: ____ *Mark* _____ / 3
	Name of element: _____ Electron configuration: ____ Number of shells: ____ Number of valence electrons: ____ Period number: ____ Group number: ____ *Mark* _____ / 3

	Name of element: _____ Electron configuration: _____ Number of shells: _____ Number of valence electrons: _____ Period number: _____ Group number: _____ *Mark* _____ / 3
	Name of element: _____ Electron configuration: _____ Number of shells: _____ Number of valence electrons: _____ Period number: _____ Group number: _____ *Mark* _____ / 3
	Name of element: _____ Electron configuration: _____ Number of shells: _____ Number of valence electrons: _____ Period number: _____ Group number: _____ *Mark* _____ / 3

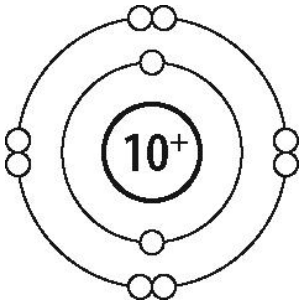
Name_____ **Date**_____

GROUPS AND PERIODS - PRACTICE 2

1. The following diagram is a Bohr-Rutherford diagram of one element from the periodic table

To which group and period does this element belong?

A) Group 2 period 2
B) Group 2 period 8
C) Group 8 period 2
D) Group 8 period 8



2) ***Draw a Rutherford-Bohr atomic model of the element in the third row and the fifth column of the periodic table.*** Remember to write the name of the element.

3) How many valence electrons does each of the following elements have?

a) Magnesium _____
b) Silicon_____
c) Lithium_____
d) Chlorine _____
e) Sodium_____
f) Radon _____

4) What do the elements situated on the same period have in common?

6. What do the elements situated in the same group have in common?

7. Elements situated in the same group display similar chemical properties because:

8. The atomic number represents :

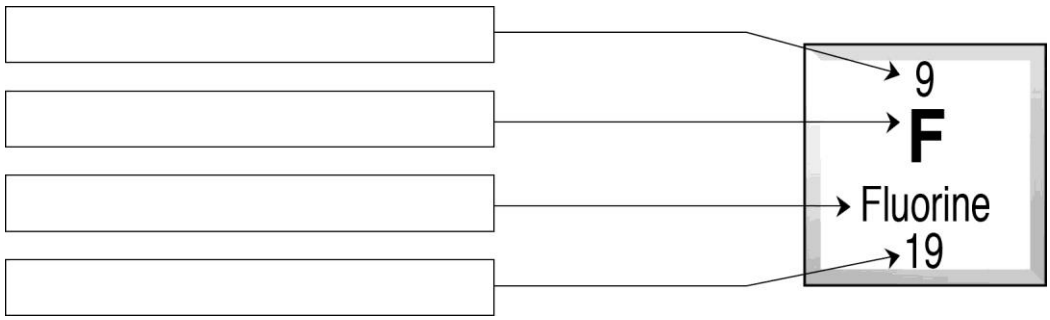
9. ***The elements in the periodic table are organized in increasing*** _____ :

10. ***Match each term with its definition.***

Term	Definition
a) Element b) Periodic table c) Atomic number d) Chemical symbol e) Atomic mass	1. Relative mass of one atom of an element with respect to an atom of another element 2. International abbreviation of the name of an element 3. Substance that cannot be separated into other substances by physical or chemical means. 4. Catalogue providing details on element properties 5. Number that indicates where an element can be found in the periodic table.

11. Here is a sample periodic table entry. ***Use the words in the box to identify each item of information it contains.***

Name of element Atomic mass Chemical symbol Atomic number



12. There are many different kinds of periodic tables, some more complex than others. For example, different colours can be used to identify an element as a solid, liquid or gas, or as a metal or nonmetal. Answer the following questions using the periodic table on the inside back cover of the textbook.

a) ***Classify the following elements by their state at a temperature of 25°C:***
Hg, Au, Br, O, Mg, He, H, Ca

Gaseous elements	Liquid elements	Solid elements

b) Identify each element described.

My atomic number is 8.

My atomic mass is 12.

My symbol is K.

My atomic mass is four times the atomic mass of hydrogen.

I am the only liquid metal at a temperature of 25°C.

Name_____ **Date**_____

THE PERIODIC TABLE – SPECIAL FAMILIES

1. ***To which chemical family do the following elements belong?***

Be, Sr, Ra

a) inert gases b) alkaline earth c) halogens d) alkali metals

2. ***Which element is in the same family as Ar and Kr ?***

a) I b) N c) Ne d) Co

3. ***Which of the following series of elements represents the halogen family?***

a) Fe, Co, Ni, Cu, Zn b) Li, Na, K, Rb, Cs c) F, Cl, Br, I, At d) Li, Be, C, N, O

4) Listed below are the characteristics of an element from the periodic table:
- It is a metal
- Its outermost level has 2 electrons
- It is found in bones and teeth

To which group in the periodic table does this element belong?

A) Alkali metals B) Alkaline earth metals C) Halogens D) Inert gases

5. ***Draw a Lewis structure for each of the following elements.*** Remember to write the names of the elements.

a) I am an alkali metal belonging to the second period.

b) I am the lightest alkaline earth metal.

c) I am the smallest of the atoms with four valence electrons.

6. ***Draw a Rutherford-Bohr atomic model for each of the following elements***. Remember to write the names of the elements.

A) I am the first element in the group of halogens.	B) I am an inert gas with three electron shells.	c) I am a halogen with one electron shell more than fluorine.

FILL IN THE BLANKS

7. A group (*family)* is _____ in the periodic table of the elements.

8. Elements situated in the same group display _____ because have the same number of valence electrons.

9. The number of the group corresponds to the number of _____.

10. A period is a _____ in the periodic table of the elements.

11. Elements situated on the same period *have the same*_____ .

12. The name of group IA (1) is _____. Elements in group 1 very are soft metals, usually stored in oil due to their _____.

13. The name of group IIA (2) is _____. These metals are mainly found in _____.

14. The name of group VIIA (7) is _____. They are also very reactive and used for _____.

15. The name of group VIIIA (8) is _____. These elements do not _____.

16. Under normal conditions, the_____ gases do not react with the other elements in the Periodic Table.

17. The chemical family to the right of the alkali metals is _____