

1 when sugar or salt is added to water it dissolves to form _____.

heterogeneous mixture
homogeneous mixture
compound
element

2 which of the following is composed of only one atom

CH_4 , H_2O , N_2 , PCl_3 , H_2Se

3 which one of the following has the greatest attraction for e^-

Al , Mg , P , Si , Cl

4 Given Si . The number of core and # of valence e^- are

$1s^2 2s^2 2p^6 3s^2 3p^2$

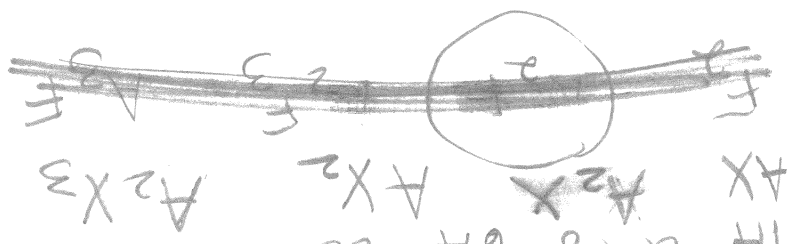
$4, 10$, $2, 12$, $12, 12$, $10, 4$

m

5

Based on the P table above, elements

from 1A and 6A combine to form:



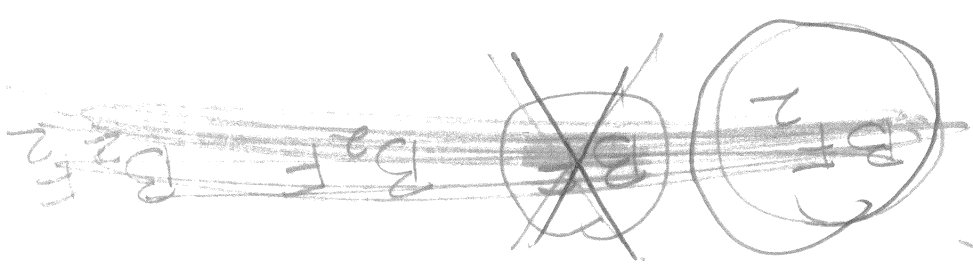
6

Based on P table above, elements

from 2A combine with 6A to



form



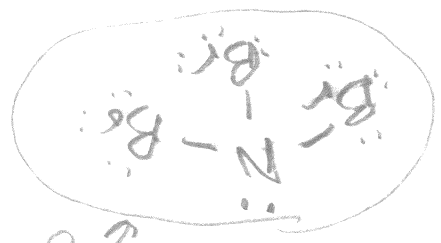
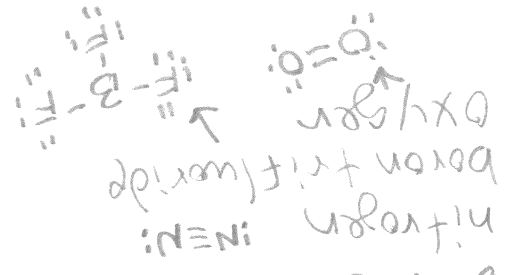
7

which elements combine to form

an ionic bond



Draw the LF of nitrogen tribromide



separation methods choose the for a homogeneous mixture:

16

Filtration

Decanting

TLC

Distillation

which two elements are most similar?

17

P Cl Mg Sb Kr

← same group

What is the charge on an element with 85 protons and 86 electrons?

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Write correct L.F. for:

$\text{Na}, \text{H}_2, \text{O}_2, \text{Br}_2, \text{Cl}_2, \text{I}_2, \text{CH}_4, \text{NH}_3$

In which of the compounds do

you find an ionic bond?

11

CH_4 HCl H_2SO_4 CF_4 SO_2 K_2CO_3

How many atoms in $2 \text{C}_6\text{H}_{12}\text{O}_6$

12

48

When Ba metal reacts with

oxygen the compound formed is

BaO

$2\text{Ba} + \text{O}_2 \rightarrow 2\text{BaO}$

Compound formula for aluminum

Al_2S_3

reacted with sulfur.

Formula for Sulfur dioxide

SO_2

calculate Z_{eff} for C valence e^-

$$Z_{eff} = 6 - 2 = 4$$

use Z_{eff} to explain why

F has a higher IE than Be,

Calc required

$$Z_{eff} F \text{ is } +7$$

$$Z_{eff} Be \text{ is } +2$$

F has a higher attraction for its

$$e^- + 7 > 2$$

circle the 2 factors that control the size of an element's

nuclear charge + core e^-

nuclear charge + Z_{eff}

nuclear charge + valence e^-

29th 22 Write EC for

~~B~~ $1s^2 2s^2 2p^1$
~~C~~ $1s^2 2s^2 2p^2$
~~P~~ $1s^2 2s^2 2p^6 3s^2 3p^3$
~~S~~ $1s^2 2s^2 2p^6 3s^2 3p^4$
~~Cl~~ $3s^2 3p^5$
~~Ar~~ $3s^2 3p^6$

Write the EC for the atom in period 2, group 2A

Be $1s^2 2s^2$

~~23~~ EC for:

~~Sc~~ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^1$
~~Cr~~ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 3d^5$
~~Fe~~ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$
~~Cu~~ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 3d^{10}$
~~Zn~~ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10}$

24

Given the OD of O:

11	11	11	11	1
15	25	4	B	C
<u>2p</u>				

From which platform will the first e^- most likely be ionized from and why?
 A more likely

$$PE + A > PE + B + C$$

25

write the OD of N and O on the board. why is the first IE of $N > O$?

N	O
11 11 11 11 1	11 11 11 11 1
15 25 <u>2p</u>	15 25 <u>2p</u>

N has 3 singlets, O has 2 e^- paired, $11 > 10$ in PE than 1 (singlets)

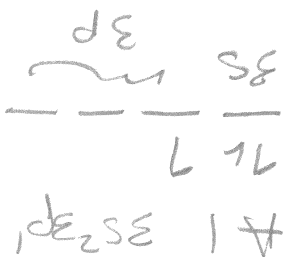
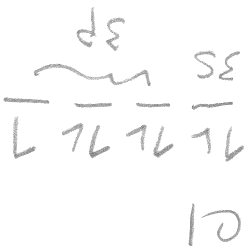
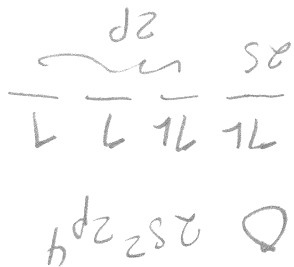
26

which ion is larger? I^- or F^-

27

which is smaller? O^{2-} or F^-

write out of outer valence:



⑥ which element ionizes more easily, Zn or Al? why?

Zn. Because Al required heating in HCl soln for longer period.

⑦ what was the primary evidence that

calcium ionizes more easily than magnesium?

Ca reacted in H_2O
Mg did not react with H_2O .

28

Based on periodic trends, rank the following elements based on big to small using an arrow and words.

Polonium, Oxygen, Sulfur, Tellurium

Small O, S, Te, Po big

calculate Z_{eff} for the $n=2$ e- of Al. $1s^2 2s^2 2p^6 3s^2 3p^1$

$$Z_{eff} = 13 - 2 = +11$$

Given Cl and Ca, calculate Z_{eff} for the $n=2$ e- of both. From which is it harder to remove an $n=2$ e-?



$$Z_{eff} = 20 - 2 = +18$$

$$Z_{eff} = 17 - 2 = +15$$

Harder for Ca since $+18 > +17$

31 Compare Na^+ and Mg^{+2} ; why is the size of $Mg^{+2} < Na^+$? $Z_{eff} Mg^{+2} > Z_{eff} Na^+$

New n is $n=2$ for both.

$$Z_{eff} Mg^{+2} = +10 \quad Z_{eff} Na^+ = +9$$

write the EC of the new valence

when K ionizes to K^+ $1s^2 2s^2 2p^6 3s^2 3p^6$

White Board : class 7

EC of: $3s^2 3p^3$ $4s^2 3d^2$ P, T, O, F, Ar

② OD of valence $4s^1 3d^5$ $4s^1 3d^{10}$ P, Cr, B, C, Ne Cu

When Li reacts with water, the solution formed is basic because it

contains OH^- which is a strong base.

Out of the following elements, which two have the closest diameter?

Na, P, Ar, Mn, Fe

Its easier to remove an e^- from?

C, Ge

Determine the # of core e-

Br Br
+ valence

$$35 - 7 = 28e^-$$

Determine the core e- for

Ge. Ge
32 32

$$32 - 4 = 28$$

Determine the core e- for

P. P
15 15

$$15 - 5 = 10e^-$$

calculate the core e- Si

Si
 $1s^2 2s^2 2p^6 3s^2 3p^2$

$$10e^-$$

calculate the core e- for K

$1s^2 2s^2 2p^6 3s^2 3p^4$

$$18e^-$$