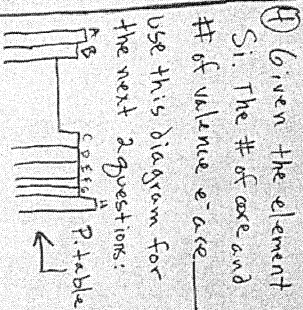


Cham 7 5-14-18 Comp Rev

- ① When sugar or salt is added to water it dissolves to form a _____.
- heterogeneous mixture
- homogeneous mixture
- ② Which of the following is composed of only one type of atom?
CH₄, H₂O, N₂, PCl₃
- ③ Which of the following has the greatest attraction for e⁻ when bonded to another atom?
Al, Mg, P, Si, Cl



- ⑤ Based on the table, when elements from A and F combine the form _____.
- AF₂, A₂F, A₂F₃, A₃F
- ⑥ Based on the table, when B combines with F the formula is _____.
- BF₂, BF, B₂F, B₂F₂
- ⑦ Which elements combine to form an ionic bond?
Na, O, S, Cl

- ⑧ Draw the LF of: nitrogen trifluoride, nitrogen, boron trifluoride, oxygen.
- ⑨ Given: $\ddot{X}:\ddot{X}:$, the element is: H₂, O₂, N₂, Cl₂, S₂
- ⑩ Given: $\ddot{X}:\ddot{X}:$, the element is: H₂, Cl₂, N₂, O₂, S₈
- ⑪ The boiling of H₂O is a _____.

- ⑫ which element is smallest? Cu, Ti, Mn, Fe
- ⑬ Given PC, calc neutrons.
- ⑭ Draw the correct LF.
POCl₃, HCl, ClO⁻, NO₃⁻, SeCl₂, CH₃S-
- ⑮ In which compound do you find an ionic bond?
CH₄, H₂SO₄, K₂CO₃, OF₂
- ⑯ Choose best separation method for a homogeneous mixture.
filtration, decanting, TLC, distillation
- ⑰ which 2 elements are most similar?
P, Cl, Mg, Sb, Kr

- ⑱ what is the charge on an element with 85 protons and 86 e⁻?
- ⑲ Calc Zeff for C valence e⁻.
- ⑳ Calc Zeff for F and Be valence e⁻. Why is it harder to remove an e⁻ from F than Be?
- ㉑ write down the 2 factors that control the size of the atom: nuclear charge + core, nuclear charge + Zeff
- ㉒ write the EC for: B, C, P, S, Cl, Ar
- ㉓ Calc # core e⁻ in Br.
- ㉔ Determine core in Ge.
- ㉕ Calc core e⁻ in P.

- ㉖ Calc core e⁻ in K.
- ㉗ Use words and arrows to rank the following elements by size: Sr, Cd, Te, Zr
- ㉘ Identify each compound as ionic or covalent.
HBr, H₂SO₄, C₂H₄, CH₄, KCN, CaCl₂, KMnO₄
- ㉙ Given the ECs, predict the charge on the element if it reacted.
13²23²20³, 13²23²20³35², 13²23²20³35²39⁴
- ㉚ which atom is larger?
K or Li

- ㉛ rank the atom based on size using arrows and words.
S, Te, O, Pb
- ㉜ Identify the mixture by drawing the correct picture on your board:
-
- ㉝ which pair of elements is closest in ionization energy?
Mn, Na, P, Ar, Fe

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

heterogeneous mixture
compound

homogeneous mixture
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 $5s^2 2s^2 2p^6 3s^2 3p^2$

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



5

Based on the P. table above, elements from A and F combine to form:



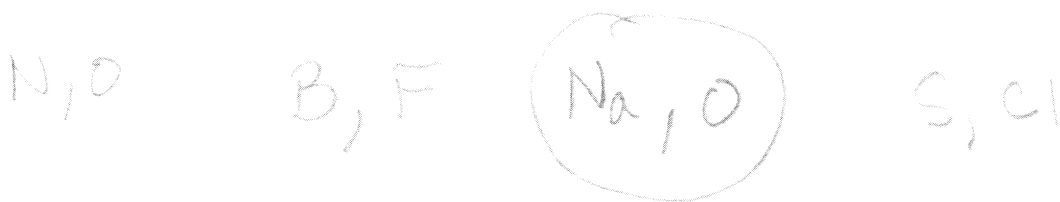
6

Based on P. table above, elements from B combine with F to form



7

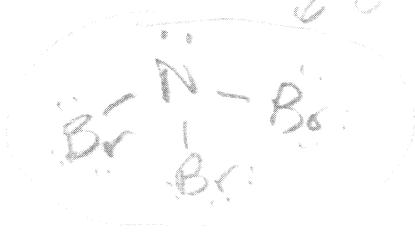
which elements combine to form an ionic bond



8

Draw the LF of nitrogen tribromide

nitrogen $:N \equiv N:$
boron trifluoride $\downarrow$
oxygen $\downarrow$



9 Given $\text{:}\ddot{\text{X}}\text{:}\ddot{\text{X}}\text{:}$, the element is

H_2 , ~~O_2~~ , H_2 , Cl_2 , S_2

10 Given $\text{:}\ddot{\text{X}}\text{:}\ddot{\text{X}}\text{:}$, the element is

H_2 , Cl_2 , N_2 , O_2 , S_8

11 The boiling of H_2O is a

physical change, chemical change

12
 12. when nitrogen ionizes to nitride,
 how many electrons does it
 gain? Show proof by calculation.

$$\begin{array}{r} \text{N}^{-3} \rightarrow 3e^{-} \\ +7 \\ -10 \\ \hline -3 \end{array}$$

13
 13. Use arrow and word to rank
 reactivity of barium, magnesium,
 strontium, calcium.

Ba, Sr, Ca, Mg
 big ← —————→ small
 more less

14
 14. Of the following elements, which is
 most likely the smallest?

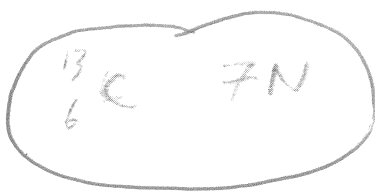
copper, titanium, manganese, iron

↓
 Cu

chem 2. 10/10 to Edward

~~10/10~~ ~~10/10~~

1) Calculate the number of neutrons.



15

← *

2) Determine the atomic

weight:

$$V = 50.94$$

$$\text{Cr} = 52$$

$$\text{N} = 14.01$$

$$\text{C} = 12.01$$

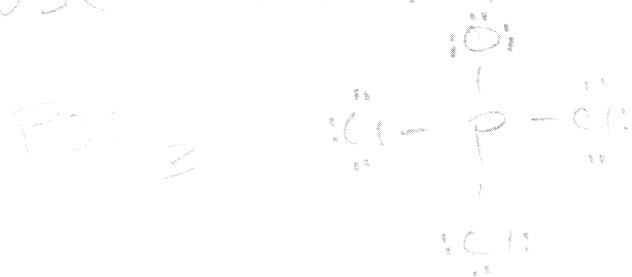
$$\text{Ar} = 39.95$$

3) ~~Calculate the atomic weight~~

4) Thomson discovered the electron and this particle has a "-" charge.

16

~~4/16~~ Use octet rule and draw LF



~~17~~ ~~18~~ ~~19~~

18

choose the

separation methods

for a homogeneous mixture

Filtration

Extraction

* TLC

* Distillation

~~60~~ ~~17~~ ~~18~~ ~~19~~ 19

which two elements are most similar?

P Cl Mg Sb Kr

(P, Sb) ← same group

~~17~~ ~~18~~ ~~19~~ 20

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

(-1)

~~101~~ ²¹ calculate Z_{eff} for C valence e^-

$$Z_{\text{eff}} = 6 - 2 = \textcircled{4}$$

~~111~~ ²² use Z_{eff} to explain why

F has a higher IE than Be,
 Calc required

Z_{eff} F is +7

Z_{eff} Be is +2

F has a higher attraction for its e^- $+7 > +2$

~~121~~ ²³ Circle the 2 factors that control the size of an element.

nuclear charge + core e^-

nuclear charge + Z_{eff}

nuclear charge + valence e^-

24 ~~24~~
 Write EC for ~~Ar~~

24

~~Ar~~ B $1s^2 2s^2 2p^1$

~~Ar~~ C $1s^2 2s^2 2p^2$

~~Ar~~ P $1s^2 2s^2 2p^6 3s^2 3p^3$

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

Cl $1s^2 2s^2 2p^6 3s^2 3p^5$

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

~~Ar~~ Write the EC for the atom in period 2, group 2A $1s^2 2s^2$ Be

~~Ar~~ EC for ~~Ar~~ ~~24~~ ~~24~~

Zn $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10}$

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 $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10}$

~~15~~ ~~10~~ ~~24~~ 25

Determine the # of core e^-

~~35~~ for Br, ³⁵Br 7 valence

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

~~11~~ ~~4~~ 26

Determine the core e^- for

³²Ge, Ge $32 - 4 = 28$

~~15~~ ~~5~~ 27

Determine the core e^- for

¹⁵P, P $15 - 5 = 10e^-$

~~14~~ ~~28~~

Calculate the core e^- Si



$10e^-$

~~19~~ ~~19~~ 24

Calculate the core e^- for K



core $18e^-$

Balance the following combustion rxns
between the indicated hydrocarbon and

oxygen



Calculate the atomic mass of C in



$$\%C = \frac{24}{60} = 0.4 \times 12 = 24$$

Rank Sr, Cd, Te, or according to size.
Use arrows and words

Sr < Te < Cd
big ← small

30

Covalent or Ionic

HBr C

CaCl_2 I

CH_4 C

KMnO_4 I

H_2SO_4 C

KCN I

C_2H_4 C

31

~~22~~

Given the following EC's predict the charge on the ion that will form.



32

which atom of each pair is larger?

Mg or Ca

K

or Li

Co

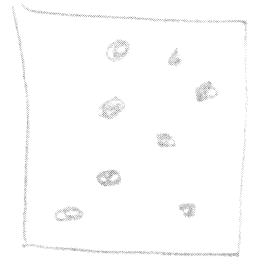
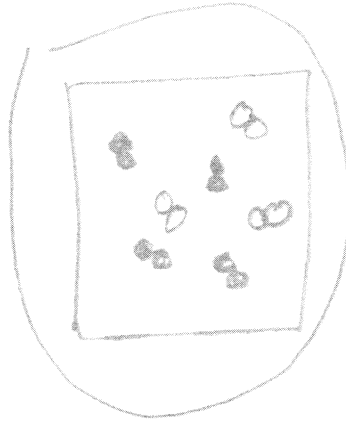
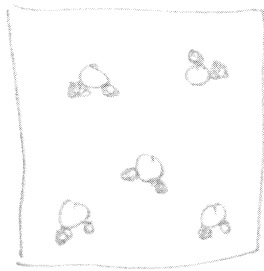
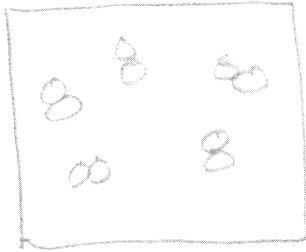
or Zn



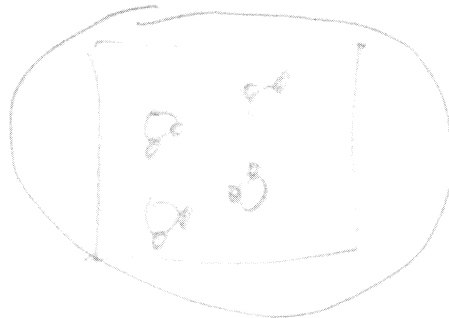
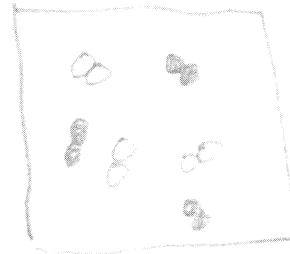
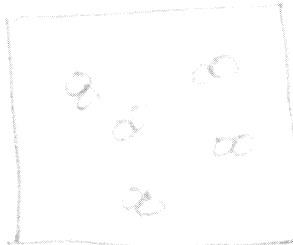


34

Identify the mixture by
drawing the box on your board:



Identify the compound:



White Board : chem 7

14 EC of: ^{3d⁵ 4s² 5s²} P, Ti, O, F, Ar

② OD of $\rightarrow 4s^1 3d^5$
²⁴ P, Cr, B, C, Ne

14 6/11 When Li reacts with water, the solution formed is basic because it contains OH⁻ which is a strong base.

35
14 6/11 Out of the following elements, which one does have the closest to water?
Na, P, Ar, Mn, Fe

14 6/11 It's easier to remove an e⁻ from?
C, Ge